

Project No.: 656-13-225 SCIP

Replace Hot Water Generators

St. Cloud VA Health Care System

Main Campus, St. Cloud, Minnesota

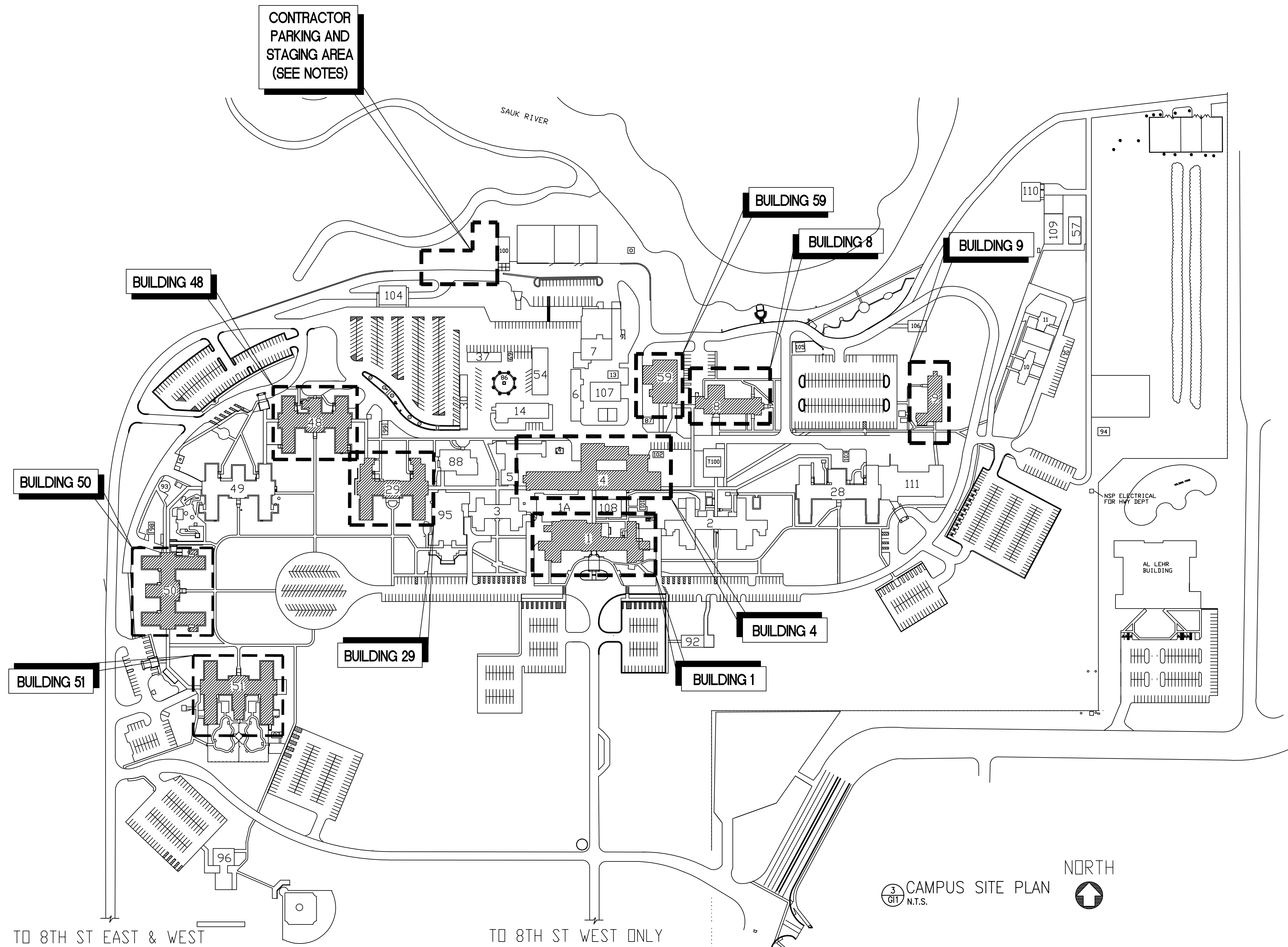
three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarters inch = one foot
one half inch = one foot
three eighths inch = one foot
one quarter inch = one foot
one eighth inch = one foot

CONTRACTOR PARKING & STAGING PROJECT NOTES:

Contractor Parking - allowed in designated project area. Contractor parking area limited to (2) vehicles at a time. No overnight parking.

Contractor Trailer - (1) construction trailer allowed in designated staging area. Trailer to be lockable. VA not responsible for lost or stolen items. Trailer can only be left here for up to 180 days. Must be moved out by the end of September. Relocate to east contractor parking area when it becomes available, coordinate with project CDR.

Demolition Dumpster - allowed near each building during demolition phase of work. Barrier (snow fence) is required to be erected at each location where dumpster is set. Coordinate with project CDR at each building. Contractor responsible for lawn restoration following removal of dumpster at each building. See General Conditions notes on this page.



GENERAL CONDITIONS

All dimensions on drawings are approximate; Drawings are not to be scaled. It is the responsibility of the contractor to verify all field conditions and physical dimensions that influence the construction area.

It is recommended that contractors visit the proposed construction site prior to submitting their bids and they are encouraged to do so.

Contractor shall adhere strictly to State and Federal Occupational Safety and Health Administration (OSHA) Standards.

Contractor shall park only in the designated parking areas and are not to park on the lawn areas; the only exception is to load or unload supplies or equipment.

Contractor is responsible for the safeguarding of their tools and equipment. All tools and equipment are not to be left unattended and are to be secured at all times when the contractor is not present, or the construction site is not supervised by the contractor.

All VA property is to be safeguarded from damage. Any damaged VA property is to be restored to original condition prior to damage or replaced completely. This includes installation, labor, and procurement expenses.

All demolished material becomes the property and the responsibility of the contractor with the exception of specified items designated either in the plans or verbally requested by the CDR to be retained by the VA. Offsite disposal of the demolished items, per specified guidelines, is the responsibility of the contractor.

Contractor must control demolition and construction dust from facility by erecting a dust barrier and ventilation with hepa filters. If venting to outside, the contractor will insure negative air pressure is maintained in encapsulated work area. When transporting debris, wet down sufficiently to prevent dust spreading.

If scaffolding is used, it must be used in accordance with (OSHA) regulations and is to be enclosed for the first eight feet above ground at end of each working day, until dismantled. Ladders must be removed and locked up at the end of each working day to prevent unauthorized persons from having access.

Clean all debris from construction site to the satisfaction of the CDR.

Contractor is responsible for erecting a barrier around work site to prevent patients, staff and visitors from entering construction site. This fence may be a plastic snow fence at open trench areas. All other areas require a metal chain-link fence be erected. Fencing to be 8' high, with top and bottom rail. Provide vehicle/equipment and materials swinging gate (lockable). Provide swinging mandoor gate with emergency egress capabilities. Coordinate construction materials and location of fence with CDR.

Contractor is responsible for repairing and replacing any damaged lawn. The restoration will be performed by a landscape contractor that regularly does sodding as part of their business. All damaged lawn will be overcut by 6' or more to accommodate full width rolls of sod. Top soil to be tilled and graded to a smooth matching grade of undamaged lawn. Sod to be thoroughly saturated with water upon placement. The contractor is responsible for watering new sod until project acceptance by the CDR.

Access to all buildings and parking areas must be maintained throughout the project.

Contractors are to coordinate all work with the Contracting Officers Representative. (C.D.R.)

SHEET INDEX

GENERAL:

G11 COVER SHEET

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PD101-4	PLUMBING - DEMOLITION PLANS
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PD101-8	PLUMBING - DEMOLITION PLANS
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PL801	PLUMBING - CONTROL SEQUENCES

100% CONSTRUCTION DOCUMENTS - FOR CONSTRUCTION

NO	REVISION	DATE

 Design Tree ENGINEERING AND LAND SURVEYING	Alexandria Office 120 17th Avenue W. Alexandria, MN 56308 (320) 762-1290	St. Cloud Office 3339 West St. Germain, Suite 250 St. Cloud, MN 56301 (320) 217-5557
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 JLG architects	Alexandria 525 Broadway Street Alexandria, MN 56308 phone: 320.755.9930 facsimile 320.759.9062 www.jlgarchitects.com copyright © 2012
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STAMPED: I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY CLOSE PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA  DANIEL J. MILLER, AIA DATE: 01-15-2013 MIL-20011 REG. NO.	APPROVED: SERVICE LINE DIRECTOR DATE: _____ APPROVED: GENS COORDINATOR DATE: _____ APPROVED: PROJECTS SECTION MANAGER DATE: _____ APPROVED: DIRECTOR FMS DATE: _____	APPROVED: INFECTION CONTROL NURSE DATE: _____ APPROVED: PATIENT SAFETY DATE: _____ APPROVED: CHIEF OF POLICE DATE: _____ APPROVED: SAFETY MANAGER DATE: _____	DRAWING TITLE PROJECT COVER SHEET APPROVED: CHIEF OF STAFF DATE: _____ APPROVED: MEDICAL CENTER DIRECTOR DATE: _____	PROJECT TITLE HOT WATER GENERATORS BUILDING No. _____ DESIGNED BY: TORAN RVM NJE LOCATION VA MEDICAL CENTER ST. CLOUD, MN 56303 DATE 01.15.2013 PROF. SCALE AS NOTED PROJECT NO. 656-13-225 SCIP SHEET NO. G11 SHEET 1 OF 23	 VAMC SAINT CLOUD MN
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PLUMBING SYMBOLS					
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	ANGLE VALVE		FIRE LINE		LOW PRESSURE CONDENSATE
	BACKFLOW PREVENTER		FLANGE		LOW PRESSURE STEAM SUPPLY
	BACK WATER VALVE		FLOOR CLEAN OUT		MEDIUM PRESSURE CONDENSATE
	BALL VALVE		FLOOR DRAIN		MEDIUM PRESSURE STEAM SUPPLY
	BASEBOARD RADIATION		FLOW MEASURING & BALANCING DEVICE		OVERFLOW RAIN WATER LEADER
	BRASS UPRIGHT PENDENT TYPE SPRINKLER HEAD		FLOW MEASURING & BALANCING DEVICE, WITH ISOLATION VALVE		OVERFLOW ROOF DRAIN
	BUTTERFLY VALVE		FUEL OIL SUPPLY		OXYGEN PIPING
	CHECK VALVE W/DIRECTION INDICATED		FUEL OIL RETURN		PIPE ANCHOR
	CHILLED WATER SUPPLY		FUEL OIL VENT		PIPE GUIDES
	CHILLED WATER RETURN		GATE VALVE		PIPE CAP
	CHROME PLATED RECESSED TYPE SPRINKLER HEAD		GLOBE VALVE		PIPE DOWN
	CLEAN OUT		HIGH PRESSURE CONDENSATE		PIPE UP
	COMPRESSED AIR LINE		HIGH PRESSURE STEAM SUPPLY		PLUG VALVE
	CONDENSATE DRAINAGE		WALL HYDRANT		PRESSURE GAUGE
	CONDENSER WATER SUPPLY		HOSE BIBB		PRESSURE REDUCING VALVE WITH INLET AND OUTLET PRESSURE
	CONDENSER WATER RETURN		HOT WATER (120° ABOVE GRADE)		QUICK CLOSING, FUSIBLE LINK VALVE
	CONNECT TO EXISTING		HOT WATER (120° BELOW GRADE)		RAIN WATER LEADER
	CONTROL VALVE (2-WAY)		HOT WATER (140°)		REDUCED PRESSURE BACKFLOW PREVENTOR
	CONTROL VALVE (3-WAY)		HOT WATER RECIRCULATION PIPING (120° ABOVE GRADE)		ROOF DRAIN
	COLD WATER (ABOVE GRADE)		HOT WATER RECIRCULATION PIPING (120° BELOW GRADE)		SIDEWALL PENDENT TYPE SPRINKLER HEAD
	COLD WATER (BELOW GRADE)		HOT WATER HEATING SUPPLY		SANITARY SEWER LINE (ABOVE GRADE)
	COLD WATER - HARD		HOT WATER HEATING RETURN		SANITARY SEWER LINE (BELOW GRADE)
	EXISTING (SAN, HW, CW, ETC.)		INTERRUPTIBLE GAS PIPING		SECURITY BARS
	FIN TUBE RADIATION		LIQUID PROPANE GAS		SNOW MELTING SYSTEM SUPPLY

HVAC SYMBOLS					
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	ACCESS DOORS, VERTICAL/HORIZONTAL		FREEZE STAT		RECTANGULAR DUCT W/ACOUSTICAL LINING
	BULLHEAD TEE WITH TURNING VANES		GAS METER		GAS PRESSURE REGULATOR
	CONNECT TO EXISTING		GAS PIPING		REFRIGERANT LIQUID LINE
	CONCENTRIC TRANSITION, 15° MAXIMUM ANGLE		GRAVITY BACKDRAFT DAMPER IN DUCT		REFRIGERANT SUCTION LINE
	EXHAUST AIR OR OUTSIDE AIR INTAKE (UP) [NEGATIVE PRESSURE]		MANUAL VOLUME DAMPER IN DUCT		RELIEF/EXHAUST AIR (UP) [POSITIVE PRESSURE]
	EXHAUST AIR OR OUTSIDE AIR INTAKE (DOWN) [NEGATIVE PRESSURE]		MOTORIZED OPERATED DAMPER IN DUCT		RELIEF/EXHAUST AIR (DOWN) [POSITIVE PRESSURE]
	FIRE DAMPER IN DUCT		NATURAL GAS		RETURN DUCT (UP)
	FIRE/SMOKE DAMPER IN DUCT		RADIUS ROUND ELBOW (RADIUS OF CENTERLINE OF DUCT EQUAL TO 1.5 X DUCT WIDTH OR DIAMETER)		RETURN DUCT (DOWN)
	FLEXIBLE DUCT		ROUND DUCT WITH SIZE INDICATED		SUPPLY DUCT (UP)
	FLEXIBLE CONNECTION IN DUCT		RECTANGULAR DUCT W/SIZE INDICATED		SUPPLY DUCT (DOWN)
					SYMMETRICAL DOVE TAIL WYE
					TEMPERATURE SENSOR TO CONTROL EQUIPMENT X
					THERMOSTAT TO CONTROL EQUIPMENT X

GENERAL MECHANICAL NOTES:

1.1 SCOPE: A. PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY FOR COMPLETE AND OPERATIONAL SYSTEMS DESCRIBED IN THIS SPECIFICATION OR SHOWN ON THE PLANS UNLESS INDICATED OR NOTED OTHERWISE. IT IS THE INTENT OF THE DRAWINGS AND SPECIFICATIONS THAT ALL SYSTEMS BE COMPLETE AND READY FOR OPERATION. B. CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE ALL DEMO'D PIPING BACK TO SOURCE. ABANDONED PIPING SHALL NOT BE ALLOWED.	B. CODE COMPLIANCE IS MANDATORY. NOTHING IN THESE DRAWINGS AND SPECIFICATIONS PERMITS WORK NOT CONFORMING TO THESE CODES, WHERE WORK IS SHOWN TO EXCEED MINIMUM CODE REQUIREMENTS, COMPLY WITH DRAWING AND SPECIFICATIONS. C. FIELD VERIFY EXACT SCOPE OF WORK PRIOR TO BID.	B. VERIFY EQUIPMENT DIMENSIONS AND REQUIREMENTS WITH PROVISIONS SPECIFIED UNDER THIS SECTION. CHECK ACTUAL JOB CONDITIONS BEFORE FABRICATING WORK. REPORT NECESSARY CHANGES IN TIME TO PREVENT NEEDLESS WORK. CHANGES OR ADDITIONS SUBJECT TO ADDITIONAL COMPENSATION WHICH ARE MADE WITHOUT WRITTEN AUTHORIZATION AND AN AGREED PRICE, SHALL BE AT CONTRACTOR'S RISK AND EXPENSE.
1.2 SITE: A. EXAMINE PREMISES AND UNDERSTAND THE CONDITIONS WHICH MAY AFFECT THIS DIVISION'S WORK BEFORE SUBMITTING BIDS. NO SUBSEQUENT ALLOWANCE FOR TIME OR MONEY WILL BE CONSIDERED FOR ANY CONSEQUENCE RELATED TO FAILURE TO EXAMINE SITE CONDITIONS.	1.5 DRAWINGS AND SPECIFICATIONS: A. PLUMBING PLANS SHOW GENERAL ARRANGEMENT OF PIPING, DUCTWORK, EQUIPMENT, ETC. FOLLOW AS CLOSELY AS ACTUAL BUILDING CONSTRUCTION AND WORK OF OTHER TRADES WILL PERMIT. BECAUSE OF THE SMALL SCALE OF PLANS, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS, AND ACCESSORIES WHICH MAY BE REQUIRED. INVESTIGATE STRUCTURAL AND FINISH CONDITIONS AFFECTING THIS WORK AND ARRANGE WORK ACCORDINGLY, PROVIDING SUCH FITTINGS, VALVES AND ACCESSORIES REQUIRED TO MEET THE CONDITIONS.	1.9 BASIC MATERIALS AND METHODS: A. PLUMBING CONTRACTOR AND ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REQUIRED DIGGING, CUTTING AND PATCHING INCIDENT TO WORK OF THIS DIVISION AND MAKE REQUIRED REPAIRS AFTERWARDS TO SATISFACTION OF ENGINEER. CUT CAREFULLY TO MINIMIZE REPAIRS TO EXISTING WORK. DO NOT CUT BEAMS, COLUMNS, TRUSSES OR ANY STRUCTURAL MEMBER. B. PATCH AND REPAIR WALLS, FLOORS, CEILINGS AND ROOFS WITH MATERIALS OF SAME QUALITY AND APPEARANCE AS ADJACENT SURFACES UNLESS OTHERWISE SHOWN. SURFACE FINISHES SHALL EXACTLY MATCH EXISTING FINISHES OF SAME MATERIALS. C. ADJUST LOCATIONS OF PIPES, EQUIPMENT, FIXTURES, ETC. TO ACCOMMODATE WORK FROM INTERFERENCE ANTICIPATED AND ENCOUNTERED. DETERMINE EXACT ROUTE AND LOCATION OF EACH PIPE PRIOR TO FABRICATION. D. IN THE EVENT THAT OTHER THAN SPECIFIED EQUIPMENT IS USED AND WILL NOT FIT JOB SITE CONDITIONS, THE HVAC CONTRACTOR AND/OR PLUMBING CONTRACTOR ASSUMES RESPONSIBILITY FOR REPLACEMENT WITH ITEMS NAMED IN SPECIFICATION. E. PLUMBING AND ELECTRICAL CONTRACTOR SHALL REMOVE ALL DEMO'D PIPE AND WIRE BACK TO MAIN; NO ABANDON MATERIAL IS ALLOWED.
1.3 LICENSE, FEES AND PERMITS: A. CONTRACTOR MUST RETAIN AND PAY FOR ALL LICENSES REQUIRED BY THE CITY AND STATE. THE PLUMBING CONTRACTOR AND ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ARRANGEMENT OF REQUIRED INSPECTIONS AND PAY ALL PERMIT AND INSPECTION FEES.	1.6 RECORD DRAWINGS: A. MAINTAIN ONE SET OF CLEAN WORKING DRAWINGS AT THE JOB SITE AND RECORD "AS-BUILT" INFORMATION FOR ANY CHANGE OR MODIFICATIONS TO THE CONSTRUCTION DOCUMENTS.	
1.4 CODE OF COMPLIANCE: A. ALL PLUMBING AND ELECTRICAL WORK SHALL COMPLY WITH APPLICABLE NATIONAL, STATE OR LOCAL CODES, LAWS, ORDINANCES AND/OR REGULATIONS. IF CONTRACTORS ARE AWARE OF CONFLICTS BETWEEN PLANS OR SPECIFICATIONS AND SUCH CODES OR REGULATIONS, THEY SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO COMMENCING APPLICABLE WORK. IF CONTRACTORS KNOWINGLY PERFORMS WORK IN VIOLATION OF SUCH CODES OR REGULATION, WHETHER SUCH VIOLATION IS SHOWN OR SPECIFIED OR NOT, THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE CORRECTION OF THE VIOLATION AT NO ADDITIONAL CHARGE.	1.7 GUARANTEE: A. GUARANTEE THE INSTALLATION FREE FROM DEFECTS OF WORKMANSHIP AND MATERIALS OF A PERIOD OF ONE (1) YEAR AFTER DATE OF CERTIFICATE OF FINAL PAYMENT, AND PROMPTLY REMEDY ANY DEFECTS DEVELOPING DURING THE PERIOD WITHOUT CHARGE. 1.8 COORDINATION: A. COORDINATE WORK WITH OTHER TRADES TO AVOID CONFLICT AND TO PROVIDE CORRECT ROUGH-IN AND CONNECTION FOR EQUIPMENT FURNISHED UNDER OTHER TRADES THAT REQUIRE HVAC AND PLUMBING CONNECTIONS. INFORM CONTRACTORS OF OTHER TRADES OF THE REQUIRED CLEARANCES AROUND HVAC AND PLUMBING EQUIPMENT TO MAINTAIN SERVICEABILITY AND CODE COMPLIANCE.	

PLUMBING ABBREVIATIONS			NOTE: NOT ALL ABBREVIATIONS MAY BE USED ON THIS PROJECT		
ABBR.	DESCRIPTION	ABBR.	DESCRIPTION	ABBR.	DESCRIPTION
AFF	ABOVE FINISHED FLOOR	FOS	FUEL OIL SUPPLY	NG	NATURAL GAS
AFG	ABOVE FINISHED GRADE	FOR	FUEL OIL RETURN	OFOI	OWNER FURNISHED, CONTRACTOR INSTALLED
BWV	BACK WATER VALVE	FTR	FINNED TUBE RADIATION	ORWL	OVERFLOW RAIN WATER LEADER
BV	BALL VALVE	GM	GAS METER	ORD	OVERFLOW ROOF DRAIN
BB	BASEBOARD RADIATION	G	GAS PIPING	OX	OXYGEN PIPING
BF	BUTTERFLY VALVE	GV	GATE VALVE	RWL	RAIN WATER LEADER
CV	CHECK VALVE	GLV	GLOBE VALVE	RPZ	REDUCED PRESSURE BACKFLOW PREVENTOR
CWS	CHILLED WATER SUPPLY	HPC	HIGH PRESSURE CONDENSATE	R	GAS PRESSURE REGULATOR
CWR	CHILLED WATER RETURN	HPS	HIGH PRESSURE STEAM SUPPLY	RD	ROOF DRAIN
CO	CLEAN OUT	H	WALL HYDRANT	SAN	SANITARY SEWER
CA	COMPRESSED AIR	HB	HOSE BIBB	SMS	SNOW MELTING SYSTEM SUPPLY
CD	CONDENSATE DRAIN	HWFU	HOT WATER FIXTURE UNITS	SMR	SNOW MELTING SYSTEM RETURN
CS	CONDENSER WATER SUPPLY	HW	HOT WATER	SF	SQUARE FEET
CR	CONDENSER WATER RETURN	HW-H	HOT WATER - HARD	SFU	SUPPLY FIXTURE UNITS
CV	CONTROL VALVE	HWRC	HOT WATER RECIRCULATION	ST	STORM SEWER
CW	COLD WATER	HWS	HOT WATER SUPPLY	TW	TEMPERED WATER
CW-H	COLD WATER - HARD	HWR	HOT WATER RETURN	TYP.	TYPICAL
CWU	COLD WATER FUTURE UNITS	HWV	HOT WATER VALVE	DN	DOWN
DFU	DRAINAGE FIXTURE UNITS	IE	INVERT ELEVATION	V	VENT
E.....	EXISTING (SAN, HW, CW, ETC.)	LPC	LOW PRESSURE CONDENSATE	VA	VACUUM LINE
FFE	FINISH FLOOR ELEVATION	LPS	LOW PRESSURE STEAM SUPPLY	VTR	VENT THRU ROOF
FL	FIRE LINE	LPG	LIQUID PROPANE GAS	WCO	WALL CLEAN OUT
FCO	FLOOR CLEAN OUT	MPC	MEDIUM PRESSURE CONDENSATE	WM	WATER METER
FD	FLOOR DRAIN	MPS	MEDIUM PRESSURE STEAM SUPPLY	YCO	YARD CLEAN OUT

HVAC ABBREVIATIONS			NOTE: NOT ALL ABBREVIATIONS MAY BE USED ON THIS PROJECT		
ABBR.	DESCRIPTION	ABBR.	DESCRIPTION	ABBR.	DESCRIPTION
AFF	ABOVE FINISHED FLOOR	FFE	FINISHED FLOOR ELEVATION	OA	OUTSIDE AIR
AFG	ABOVE FINISHED GRADE	G	GAS PIPING	OFOI	OWNER FURNISHED, CONTRACTOR INSTALLED
AD	ACCESS DOORS, VERTICAL/HORIZONTAL	IG	INTERRUPTIBLE GAS PIPING	PD	PRESSURE DROP
CFH	CUBIC FEET PER HOUR	IE	INVERT ELEVATION	RL	REFRIGERANT LIQUID LINE
CFM	CUBIC FEET PER MINUTE	LWT	LEAVING WATER TEMPERATURE	RS	REFRIGERANT SUCTION LINE
DB/WB	DRY BULB/WET BULB	SF	SQUARE FEET	RA	RETURN AIR
EWT	ENTERING WATER TEMPERATURE	TYP.	TYPICAL	SA	SUPPLY AIR
EAT	ENTERING AIR TEMPERATURE	LAT	LEAVING AIR TEMPERATURE		
EA	EXHAUST AIR	LPG	LIQUID PROPANE GAS		
ESP	EXTERNAL STATIC PRESSURE	MOD	MOTORIZED OPERATED DAMPER IN DUCT		
E.....	EXISTING (SA, RA, EA, ETC.)	NG	NATURAL GAS		

CONSTRUCTION SCHEDULE

- CONSTRUCTION IN EACH BUILDING SHALL BE COMPLETED WITHIN 2-3 WEEKS. IF ADDITIONAL TIME IS REQUIRED, PLUMBING CONTRACTOR SHALL COORDINATE WITH VA-COR.
- SYSTEM SHUT DOWN SHALL BE PERFORMED AFTER BPM. EXACT TIME AND LOCATION OF SHUT DOWN SHALL BE ARRANGED WITH COR PER SPECIFICATIONS.
- ALL WORK THAT DOES NOT AFFECT SYSTEM SHUT DOWN SHALL BE PERFORMED DURING NORMAL WORKING HOURS.

SEQUENCE OF CONSTRUCTION

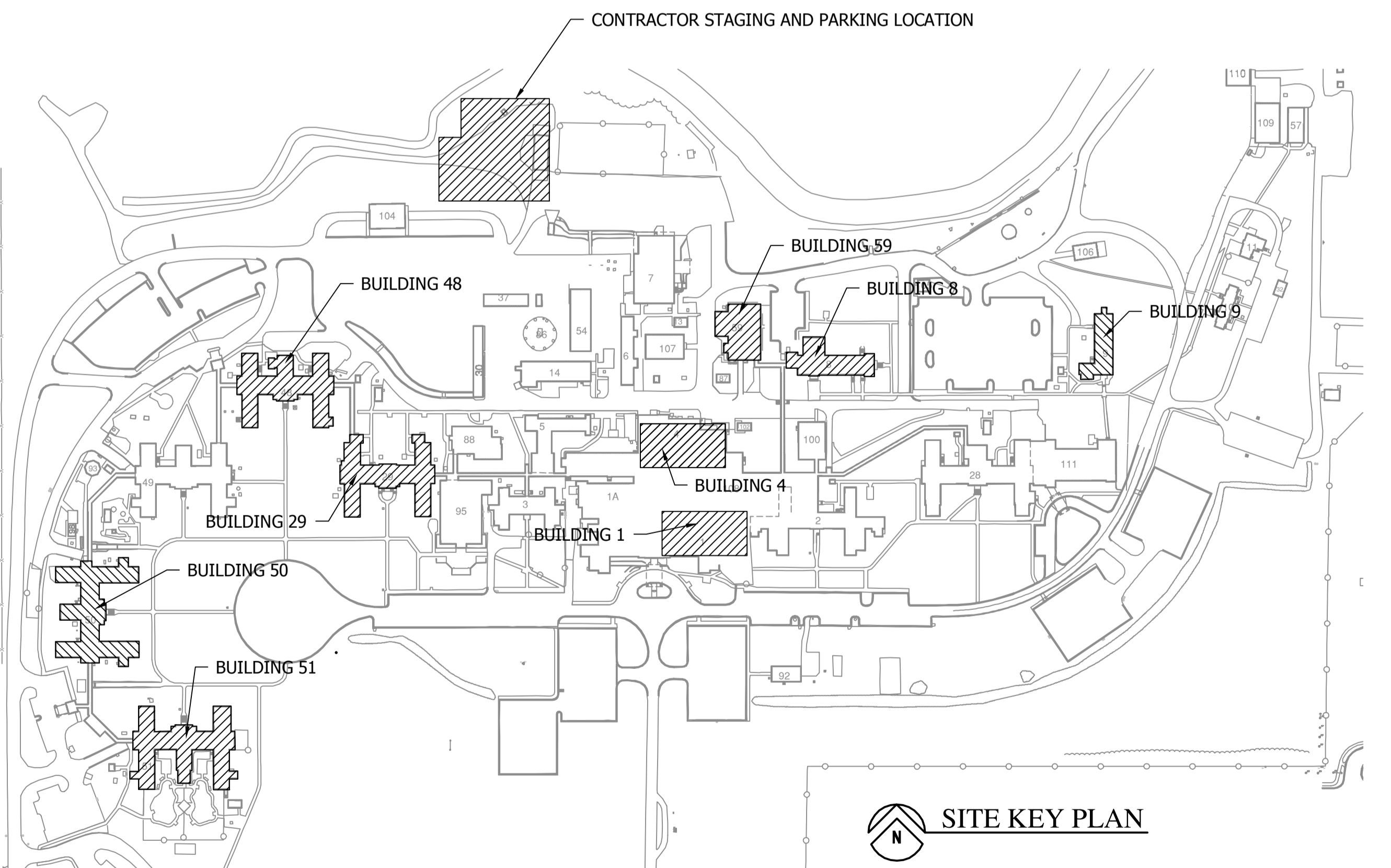
- INSTALL TEMPORARY HEAT EXCHANGER (THX-1) AS SHOWN ON PLANS.
- TIE TEMPORARY HEAT EXCHANGER (THX-1) STEAM, CONDENSATE, DOMESTIC COLD, DOMESTIC HOT WATER, AND DOMESTIC HOT WATER RECIRC INTO EXISTING SYSTEMS.
- SHUT DOWN OPERATION OF EXISTING HEAT EXCHANGER AND ENERGIZE TEMPORARY HEAT EXCHANGER (THX-1).
- DEMO EXISTING HEAT EXCHANGER AS SHOWN ON PLANS.
- INSTALL NEW HEAT EXCHANGER AS SHOWN ON PLANS.
- SHUT DOWN TEMPORARY HEAT EXCHANGER (THX-1) AND ENERGIZE NEW HEAT EXCHANGERS.
- REMOVE TEMPORARY HEAT EXCHANGER (THX-1) AND ASSOCIATED PIPING. CAP PIPING AT SYSTEM MAINS.
- TEMPORARY HEAT EXCHANGER (THX-1) LOCATION SHALL BE RETURNED TO ORIGINAL CONDITION WHEN COMPLETED.

NOTE: THE SAME TEMPORARY HEAT EXCHANGER (THX-1) SHALL BE USED FOR EACH BUILDING. WHEN ENTIRE PROJECT IS COMPLETE, OWNER SHALL RETAIN POSSESSION OF TEMPORARY HEAT EXCHANGER (THX-1).

TEMPORARY HEAT EXCHANGER SCHEDULE

UNIT TAG	MFGR.	MODEL	HEAT EXCHANGED (MBH)	FLUID TYPE	FLOW RATE (GPM)	FLUID PD (FT H2O)	EWT (°F)	LWT (°F) (BEFORE DRV)	LWT (°F) (AFTER DRV)	FLUID TYPE	PRESSURE (PSI)	FLUID PD (PSI)
THX-1	ARMSTRONG	665-DWP-PTW-DMC1-150	3,300	DOMESTIC WATER	50	10	50	140-160	120	STEAM	7	CONSTANT

- NOTES:
- SEE DETAIL 2/PLS01



100% Construction Documents - For Construction



STAMPED:
I HEREBY CERTIFY THAT THIS FINAL SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

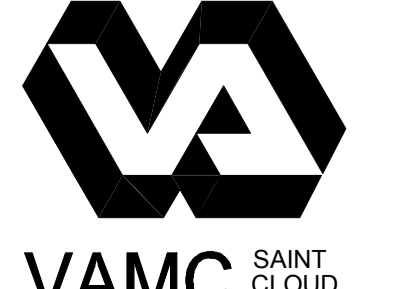
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MIN. 48008
REG. NO.

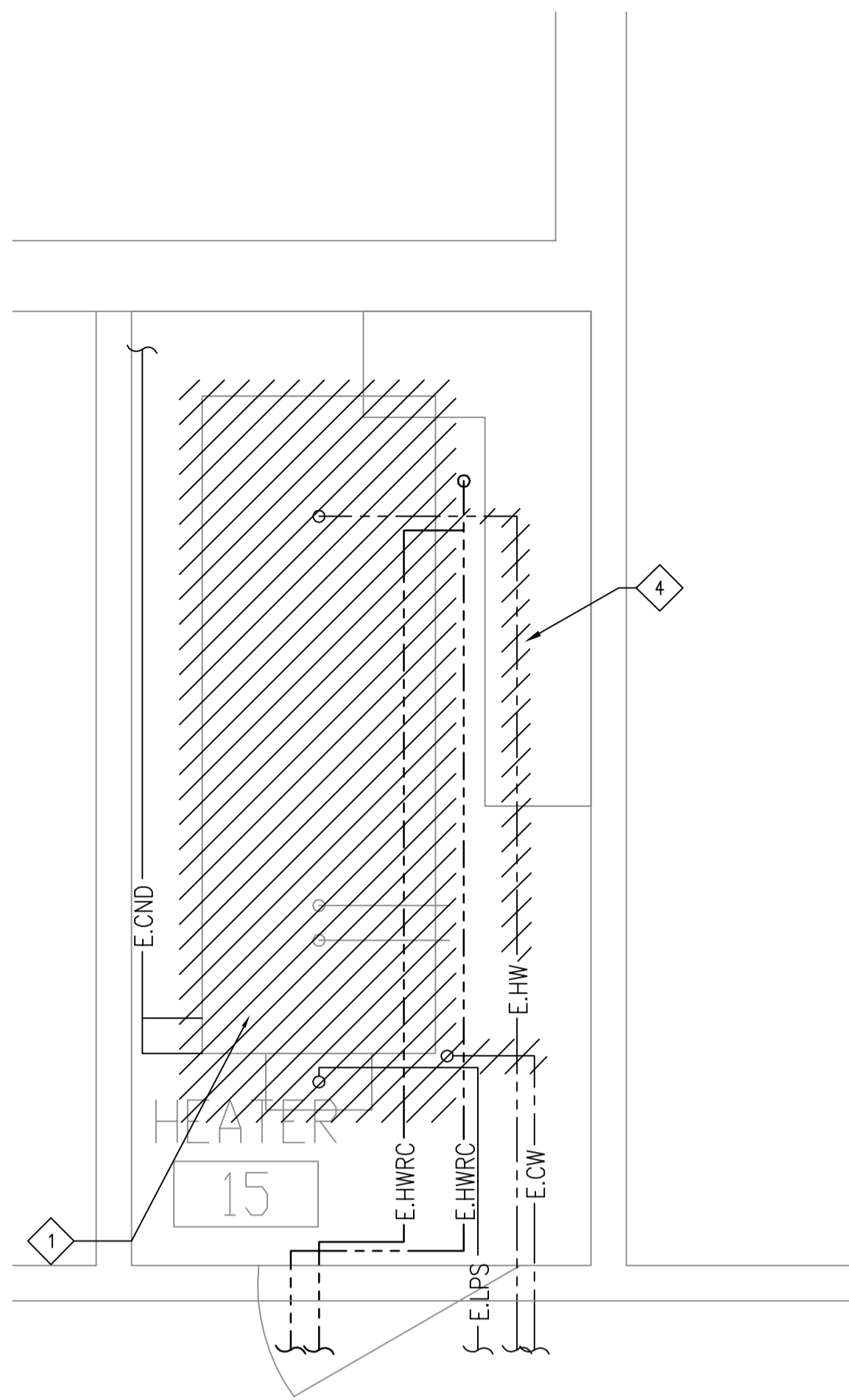
APPROVED: PROJECT DIRECTOR

DATE: _____

PROJECT TITLE HOT WATER GENERATORS				DATE 01.15.2013
PROJECT SCALE AS NOTED				PROJECT NO. 666-13-225
SCIP				DATE XXXX
BUILDING NO. AS NOTED				REVISION NO. PL001
LOCATION ST. CLOUD VA MEDICAL CENTER ST. CLOUD, MN 56303				DATE 01-15-23



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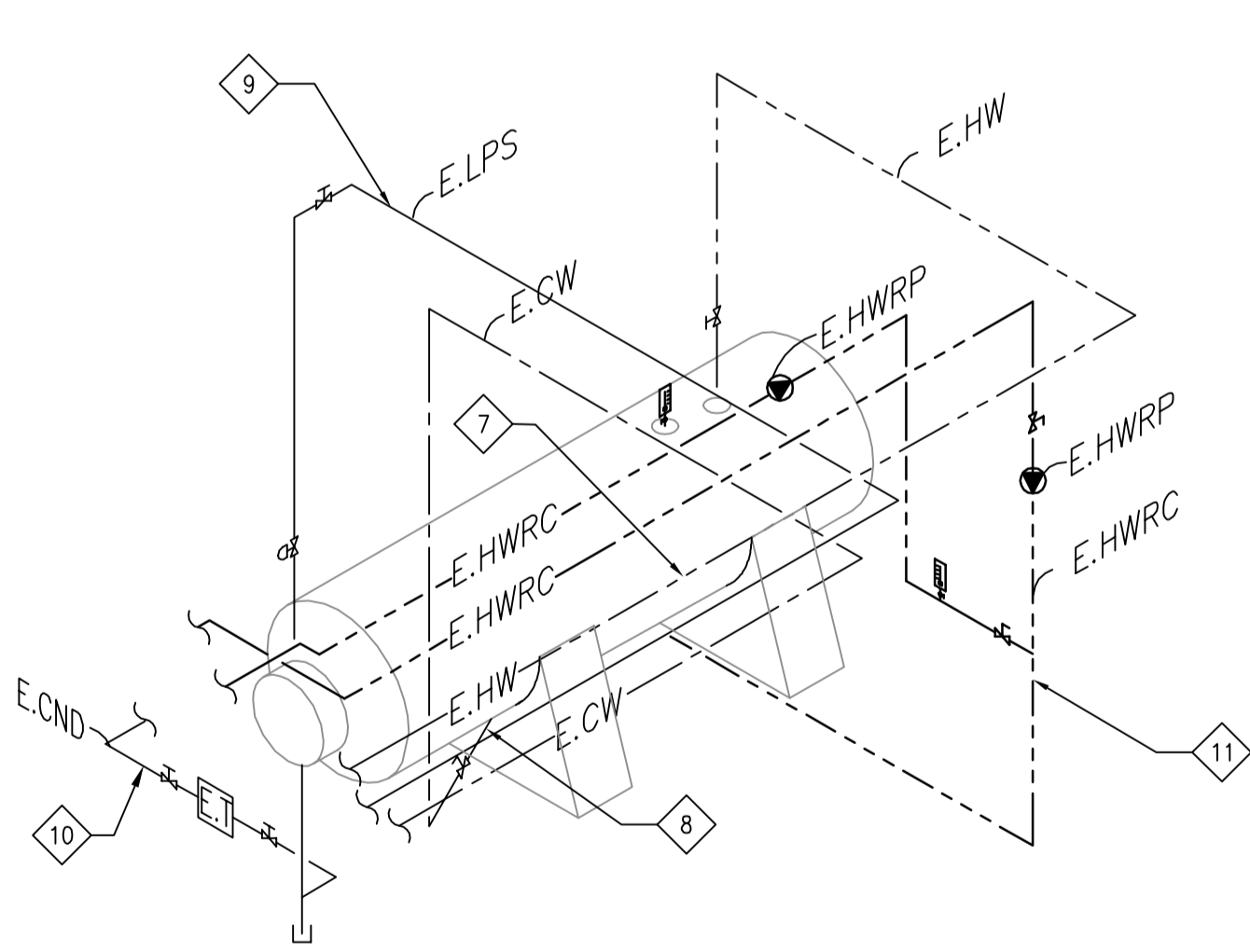
DEMOLITION PLAN
SCALE = 1/2"=1'-0"
BUILDING 1-ROOM 15



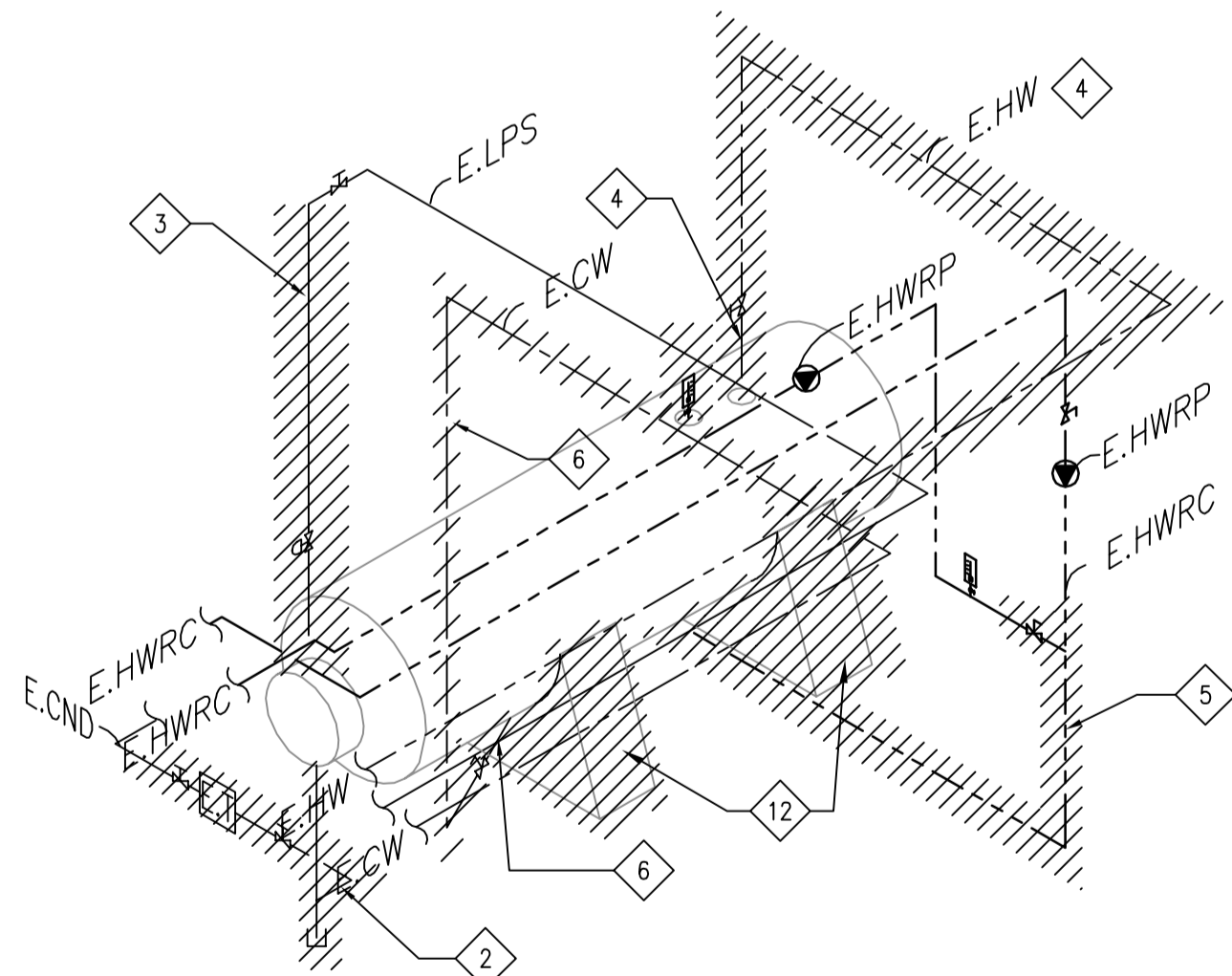
PICTURE #1
NO SCALE
BUILDING 1-ROOM 15



PICTURE #2
NO SCALE
BUILDING 1-ROOM 15



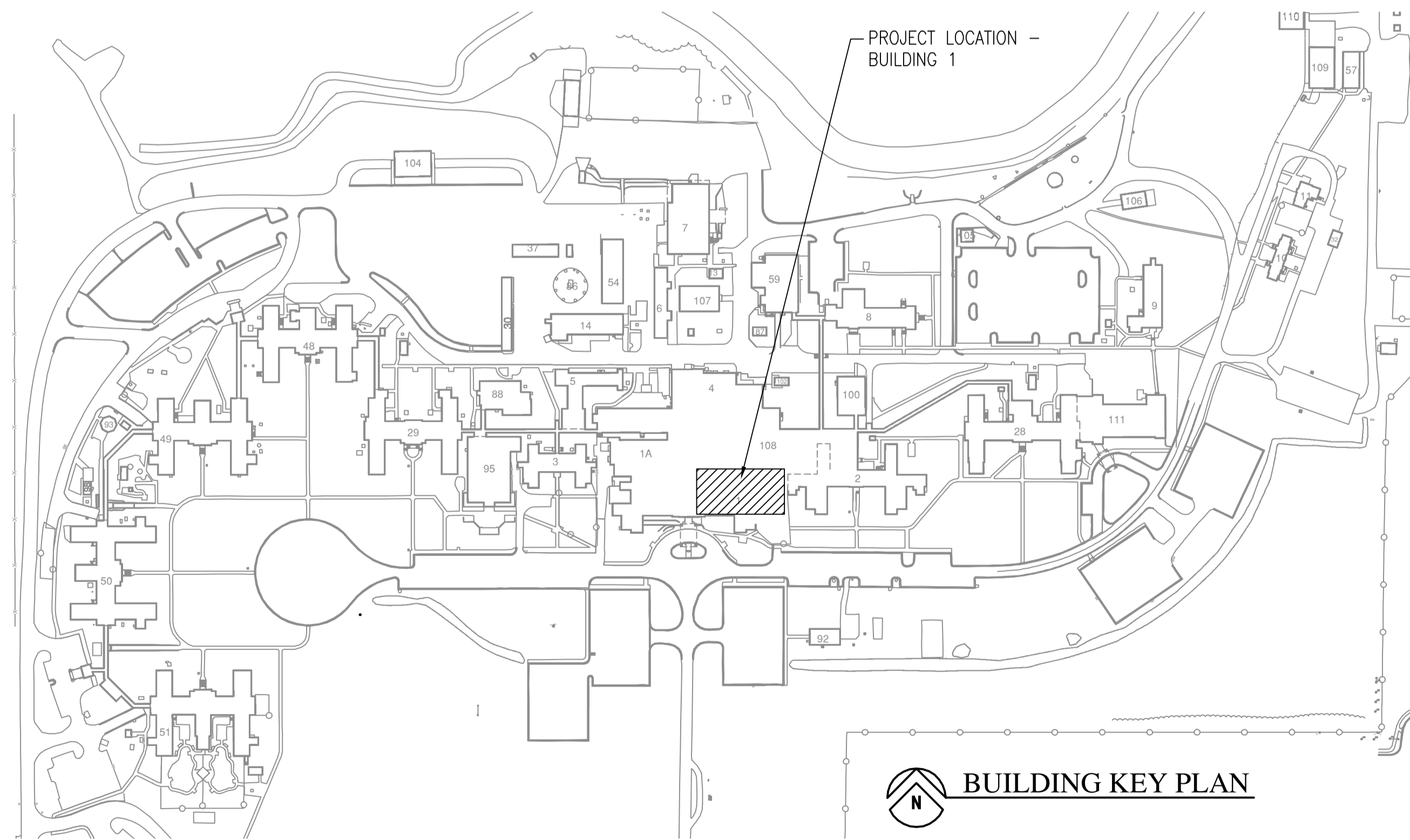
DEMOLITION ISOMETRIC (TEMPORARY)
NO SCALE
BUILDING 1-ROOM 15



DEMOLITION ISOMETRIC
NO SCALE
BUILDING 1-ROOM 15



PICTURE #3
NO SCALE
BUILDING 1-ROOM 15

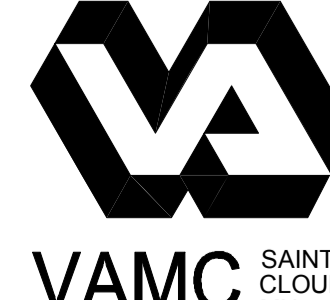
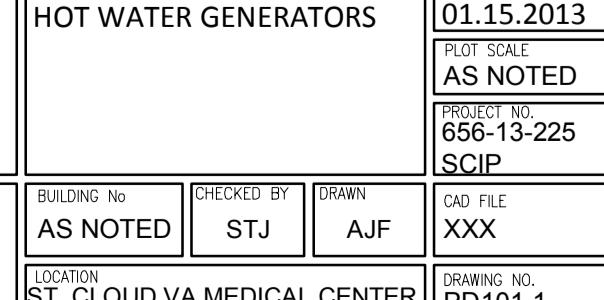
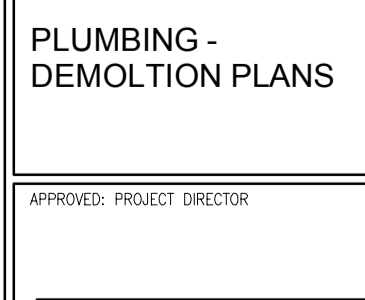
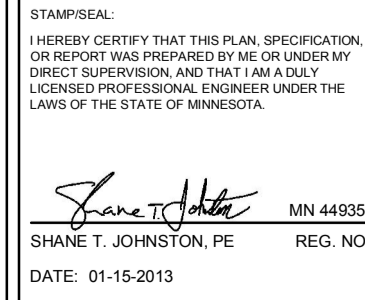


BUILDING KEY PLAN

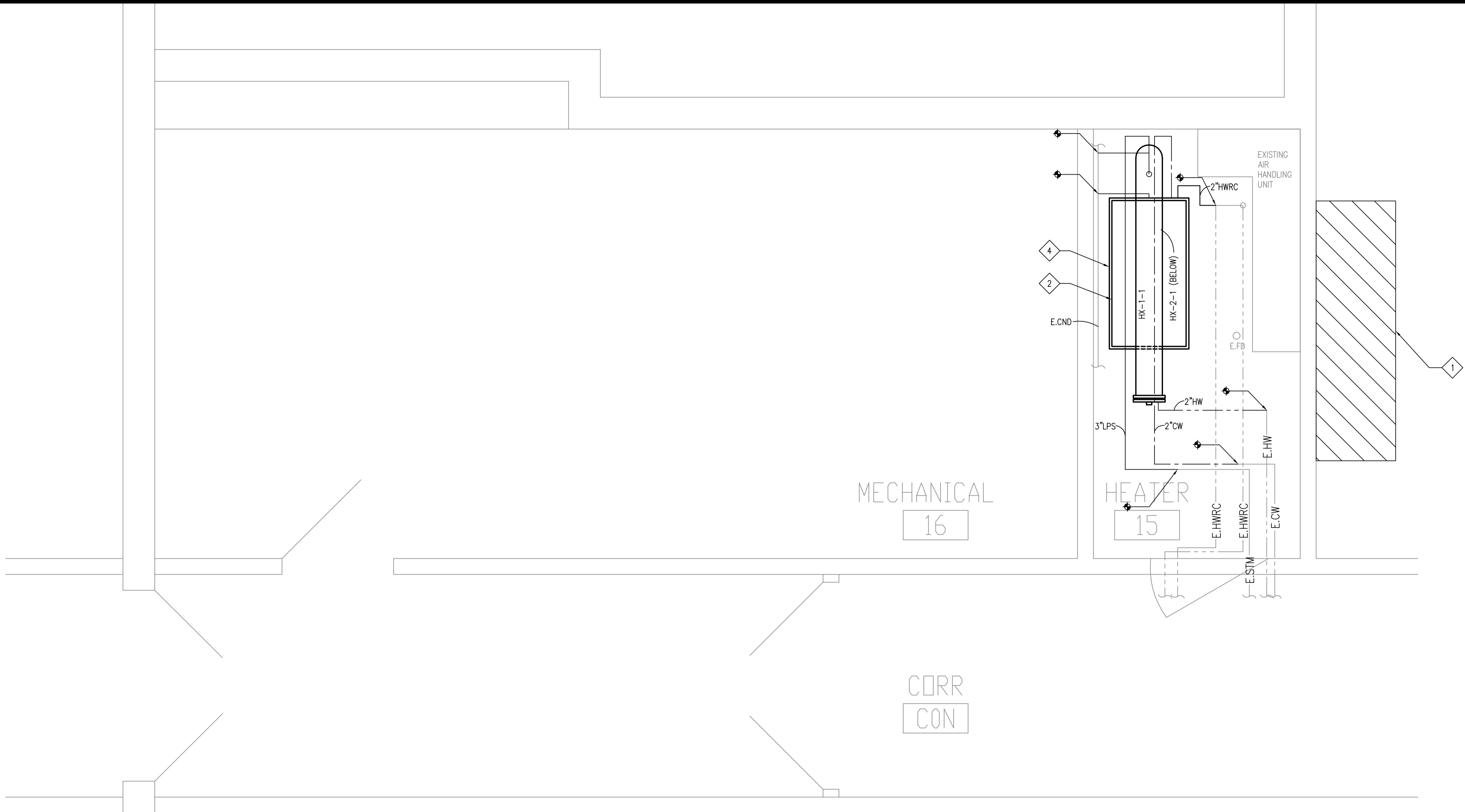
- GENERAL NOTES**
1. PLUMBING CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS.
 2. ALL FLOOR AND WALL PENETRATIONS SHALL BE SEALED TO MEET FIRE RATINGS.
 3. ALL HATCHED ITEMS DENOTES DEMOLITION.
 4. SEE SHEET PL-001 FOR SEQUENCE OF CONSTRUCTION.

- PLAN NOTES**
1. PLUMBING CONTRACTOR SHALL REMOVE EXISTING DOMESTIC HOT WATER TANK, INSULATION, GAUGES, AND ASSOCIATED MATERIALS.
 2. PLUMBING CONTRACTOR SHALL REMOVE EXISTING CONDENSATE PIPE, VALVES, CONDENSATE TRAP, AND ASSOCIATED INSULATION AND HANGERS.
 3. PLUMBING CONTRACTOR SHALL REMOVE EXISTING STEAM PIPE, CONTROL VALVE, AND ASSOCIATED INSULATION AND HANGERS.
 4. PLUMBING CONTRACTOR SHALL REMOVE EXISTING DOMESTIC HOT WATER PIPE AND ASSOCIATED INSULATION AND HANGERS.
 5. PLUMBING CONTRACTOR SHALL REMOVE EXISTING DOMESTIC HOT WATER RECIRC. PIPE, VALVES, AND ASSOCIATED INSULATION AND HANGERS.
 6. PLUMBING CONTRACTOR SHALL REMOVE EXISTING DOMESTIC COLD WATER PIPE, VALVES, AND INSULATION AND HANGERS.
 7. TIE-IN POINT FOR DOMESTIC HOT WATER TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE DOMESTIC HOT WATER TO TEMPORARY HEAT EXCHANGER (THX-1). SEE SHEET PL101-1 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 8. TIE-IN POINT FOR DOMESTIC COLD WATER TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE DOMESTIC COLD WATER TO TEMPORARY HEAT EXCHANGER (THX-1) AS REQUIRED. SEE SHEET PL101-1 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 9. TIE-IN POINT FOR STEAM TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE STEAM TO TEMPORARY HEAT EXCHANGER (THX-1) AS REQUIRED. SEE SHEET PL101-1 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 10. TIE-IN POINT FOR CONDENSATE TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE CONDENSATE TO TEMPORARY HEAT EXCHANGER (THX-1) AS REQUIRED FOR TEMPORARY HEAT EXCHANGER (THX-1). SEE SHEET PL101-1 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 11. TIE-IN POINT FOR HOT WATER RECIRC TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE HOT WATER RECIRC TO TEMPORARY HEAT EXCHANGER (THX-1) AS REQUIRED FOR TEMPORARY HEAT EXCHANGER (THX-1). SEE SHEET PL101-1 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 12. PLUMBING CONTRACTOR SHALL REMOVE EXISTING CONCRETE STAND. PATCH FLOOR TO MATCH FLOOR CONDITIONS.

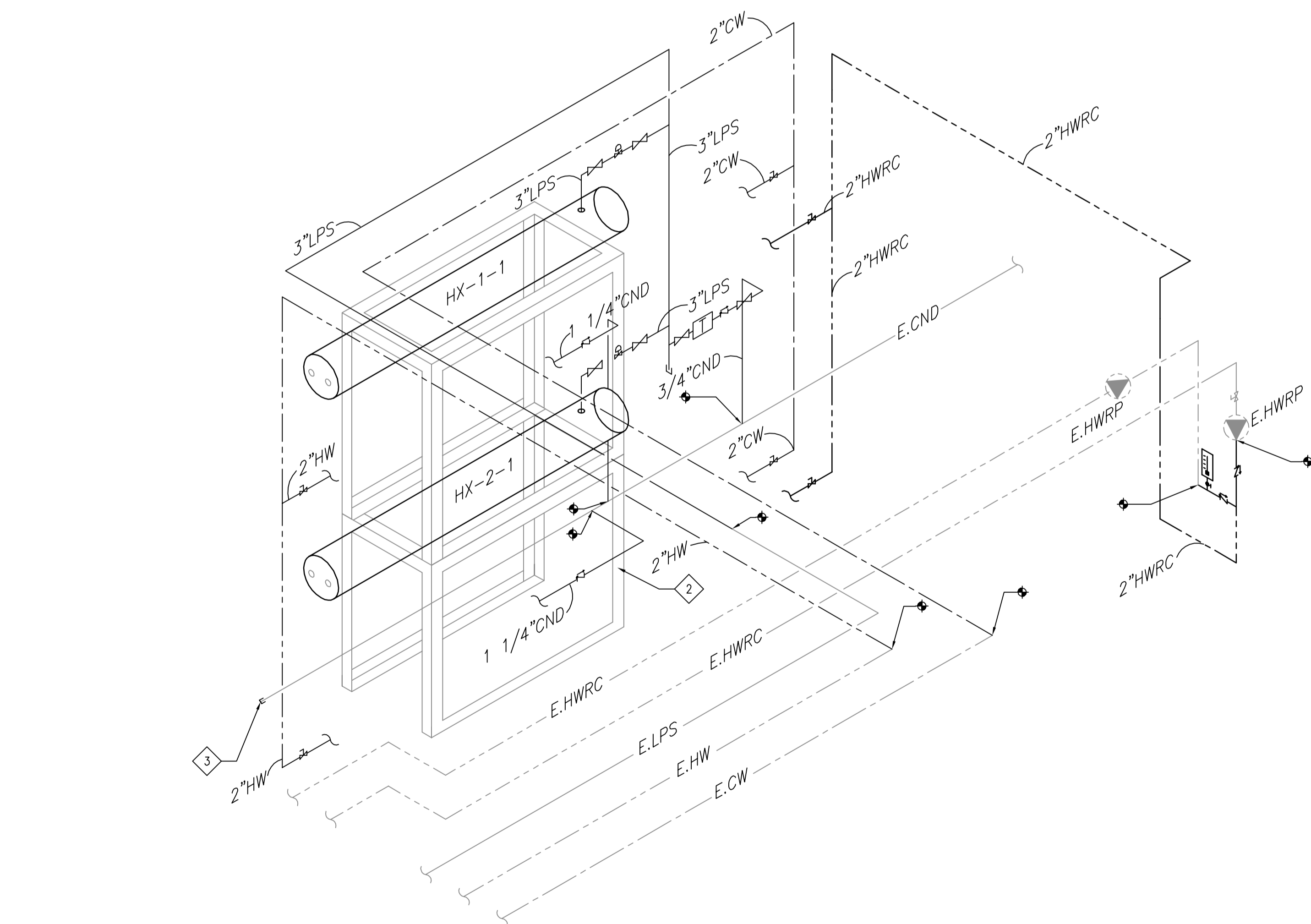
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three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarters inch = one foot
one half inch = one foot
three eighths inch = one foot
one quarter inch = one foot
one eighth inch = one foot



PLUMBING FLOOR PLAN
BUILDING 1 - ROOM 15



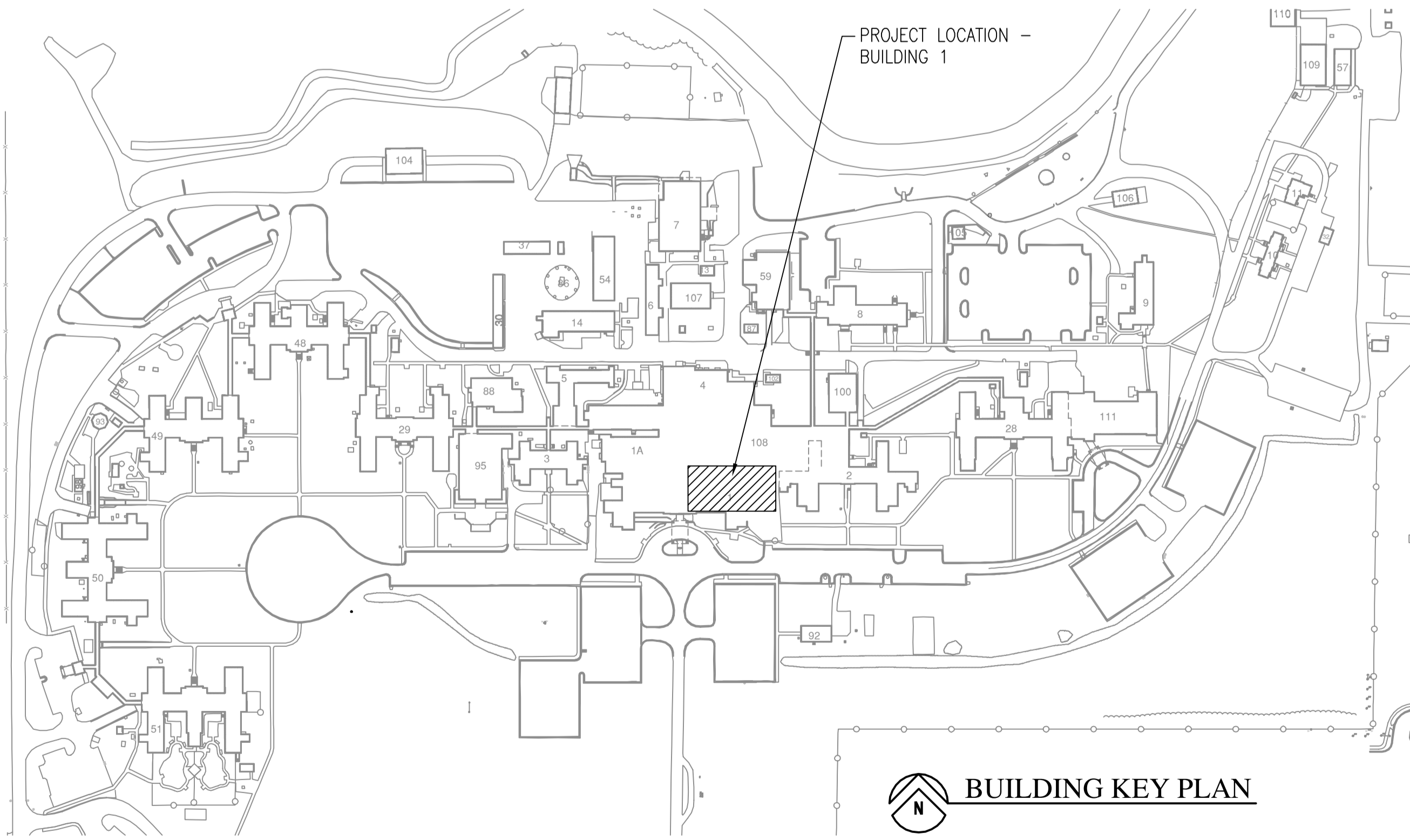
DOMESTIC WATER ISOMETRIC
BUILDING 1 - ROOM 15

- ### GENERAL NOTES
1. PLUMBING CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS.
 2. ALL FLOOR AND WALL PENETRATIONS SHALL BE SEALED TO MEET FIRE RATINGS.
 3. SEE SHEET PL-001 FOR SEQUEE OF CONTRUCTION.

- ### PLAN NOTES
1. TEMPOARARY HEAT EXCHANGER (THX-1) LOCATION.
 2. PLUMBING CONTRACTOR SHALL PROVIDE AND INSTALL PRE-MANUFACTURED HEAT EXCHANGER SKID. SKID SHALL BE PRE-PIPED INCLUDING VALVES, GAUGES AND FITTINGS AS SHOWN ON 1/PL501. CONTROLS CONTRACTOR SHALL PROVIDE HEAT EXCHANGER MANUFACTURER REQUIRED FLOW SWITCHES AND TEMPERATURE GAUGES. HEAT EXCHANGER MANUFACTURER SHALL INSTALL FLOW SWITCHES AND TEMPERATURE GAUGES PRIOR TO SHIPMENT. PLUMBING CONTRACTOR, CONTROLS CONTRACTOR AND MANUFACTURER SHALL COORDINATE.
 3. CAP EXISTING CONDENSATE.
 4. PLUMBING CONTRACTOR SHALL HIRE A LICENSED ELECTRICAL CONTRACTOR TO PROVIDE 120V POWER TO THE DIGITAL MIXING VALVE, TYPICAL TWO PER SKID. SEE 1/PL501 FOR LOCATION OF MIXING VALVES ON SKID. MIXING VALVES SHALL BE WIRED BACK TO A SPARE 20 AMP BREAKER ON A EXISTING EMERGENCY ELECTRICAL PANEL. PANEL LOCATION SHALL BE VERIFIED ON SITE DURING PRE-BID WALK-THRU. PROVIDE A NEW TYPED PANEL DIRECTORY IN EXISTING PANEL AFTER WORK IS COMPLETE. NO SPLICING ALLOWED.

HEAT EXCHANGER SCHEDULE												
UNIT TAG	MFGR.	MODEL	HEAT EXCHANGED (MBH)	FLUID TYPE	FLOW RATE (GPM)	FLUID PD (FT H2O)	EWI (°F)	LWT (°F) (BEFORE DRV)	LWT (°F) (AFTER DRV)	FLUID TYPE	PRESSURE (PSI)	FLUID PD (PSI)
HX-1-1	ARMSTRONG	665-DWP-PTW-DMC1-150	3,300	DOMESTIC WATER	50	10	50	140	120	STEAM	7	CONSTANT
HX-2-1	ARMSTRONG	665-DWP-PTW-DMC1-150	3,300	DOMESTIC WATER	50	10	50	140	120	STEAM	7	CONSTANT

NOTES:
1. SEE DETAIL 1/PL501.



BUILDING KEY PLAN

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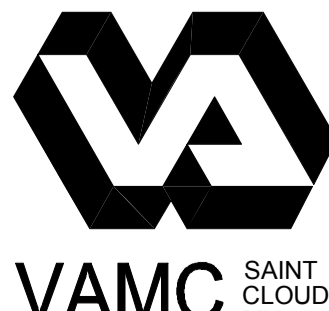
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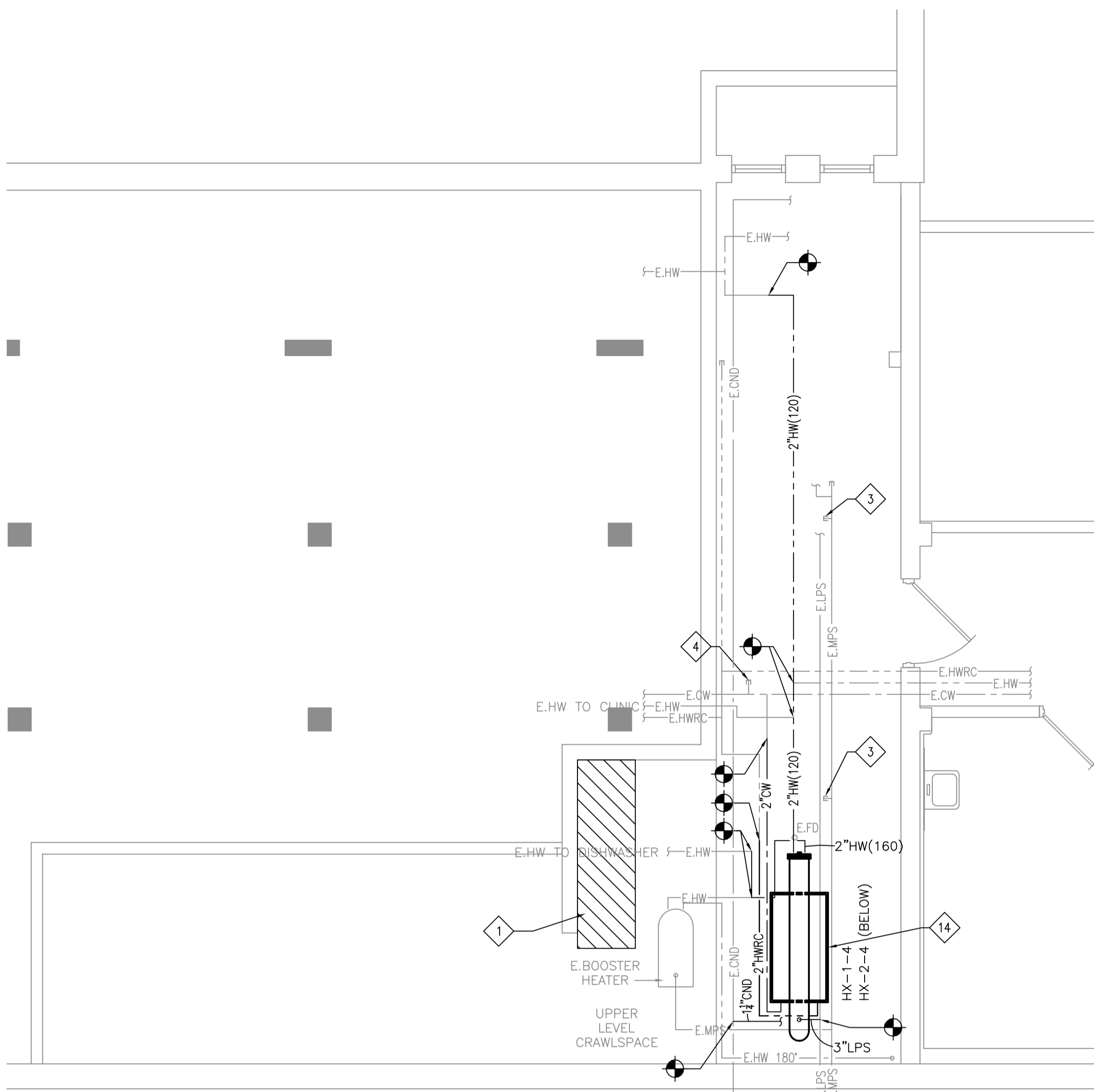
SHANE T. JOHNSON, P.E.
DATE: 01-15-2013

DRAWING TITLE:
PLUMBING - FLOOR PLAN, ISOMETRIC & SCHEDULES

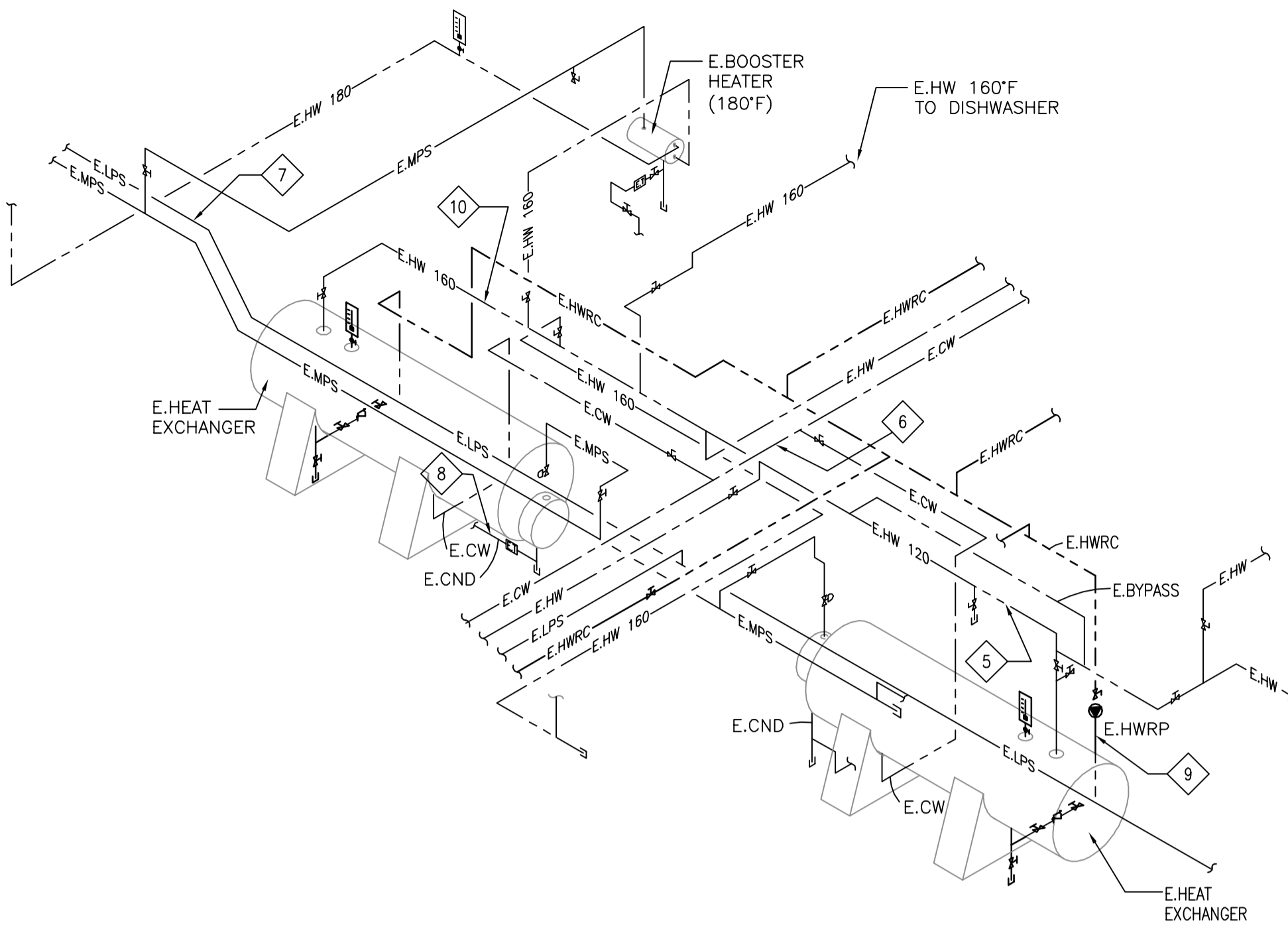
APPROVED PROJECT DIRECTOR: _____ DATE: _____

PROJECT TITLE HOT WATER GENERATORS			DATE 01.15.2013
DRAWING NO. AS NOTED	DESIGNED BY STJ	DRAWN BY AJF	PROJECT NO. 666-13-225
LOCATION ST. CLOUD VA MEDICAL CENTER ST. CLOUD, MN 56303	SCALE PL101-1-1 SHEET 4 OF 23	DATE XXX	PROJECT NO. 666-13-225





1 PLUMBING FLOOR PLAN
SCALE = 1/4\"/>



5 DEMOLITION ISOMETRIC - (TEMPORARY)
NO SCALE

- PLAN NOTES**
1. TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 2. PLUMBING CONTRACTOR SHALL PROVIDE AND INSTALL PRE-MANUFACTURED HEAT EXCHANGER SKID. SKID SHALL BE PRE-PIPE INCLUDING VALVES, GAUGES AND FITTINGS AS SHOWN ON 1/PL501. CONTROLS CONTRACTOR SHALL PROVIDE HEAT EXCHANGER MANUFACTURER REQUIRED FLOW SWITCHES AND TEMPERATURE GAUGES. HEAT EXCHANGER MANUFACTURER SHALL INSTALL FLOW SWITCHES AND TEMPERATURE GAUGES PRIOR TO SHIPMENT. PLUMBING CONTRACTOR, CONTROLS CONTRACTOR AND MANUFACTURER SHALL COORDINATE.
 3. CAP EXISTING MEDIUM PRESSURE STEAM.
 4. CAP EXISTING DOMESTIC COLD WATER PIPE.
 5. TIE-IN POINT FOR DOMESTIC HOT WATER (120°F) TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE DOMESTIC HOT WATER TO TEMPORARY HEAT EXCHANGER (THX-1). SEE 1/PL101-4 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 6. TIE-IN POINT FOR DOMESTIC COLD WATER TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE DOMESTIC COLD WATER TO TEMPORARY HEAT EXCHANGER (THX-1) AS REQUIRED. SEE 1/PL101-4 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 7. TIE-IN POINT FOR LOW PRESSURE STEAM TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE LOW PRESSURE STEAM TO TEMPORARY HEAT EXCHANGER (THX-1) AS REQUIRED. SEE 1/PL101-4 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.

- PLAN NOTES**
8. TIE-IN POINT FOR CONDENSATE TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE CONDENSATE TO TEMPORARY HEAT EXCHANGER AS REQUIRED FOR TEMPORARY HEAT EXCHANGER (THX-1). SEE 1/PL101-4 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 9. TIE-IN POINT FOR HOT WATER RECIRC. TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE HOT WATER RECIRC. TO TEMPORARY HEAT EXCHANGER AS REQUIRED FOR TEMPORARY HEAT EXCHANGER (THX-1). SEE 1/PL101-4 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 10. TIE-IN POINT FOR DOMESTIC HOT WATER (160°F) TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE DOMESTIC HOT WATER TO TEMPORARY HEAT EXCHANGER (THX-1). SEE 1/PL101-4 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 11. CAP EXISTING HOT WATER RECIRC. PIPE.
 12. EXISTING HOT WATER RECIRC. PUMP RELOCATED.
 13. PLUMBING CONTRACTOR SHALL HIRE A LICENSED ELECTRICAL CONTRACTOR TO WIRE CONDENSATE PUMP. PUMP SHALL BE WIRED BACK TO NEAREST ELECTRICAL PANEL WITH SPARE CAPACITY. NO SPLICING ALLOWED. PROVIDE 20 AMP BREAKER. PROVIDE NEW TYPED PANEL DIRECTORY IN EXISTING PANEL AFTER WORK IS COMPLETE.
 14. PLUMBING CONTRACTOR SHALL HIRE A LICENSED ELECTRICAL CONTRACTOR TO PROVIDE 120V POWER TO THE DIGITAL MIXING VALVE. TYPICAL TWO PER SKID. SEE 1/PL501 FOR LOCATION OF MIXING VALVES ON SKID. MIXING VALVES SHALL BE WIRED BACK TO A SPARE 20 AMP BREAKER ON AN EXISTING EMERGENCY ELECTRICAL PANEL. PANEL LOCATION SHALL BE VERIFIED ON SITE DURING PRE-BID WALK-THRU. PROVIDE A NEW TYPED PANEL DIRECTORY IN EXISTING PANEL AFTER WORK IS COMPLETE. NO SPLICING ALLOWED.

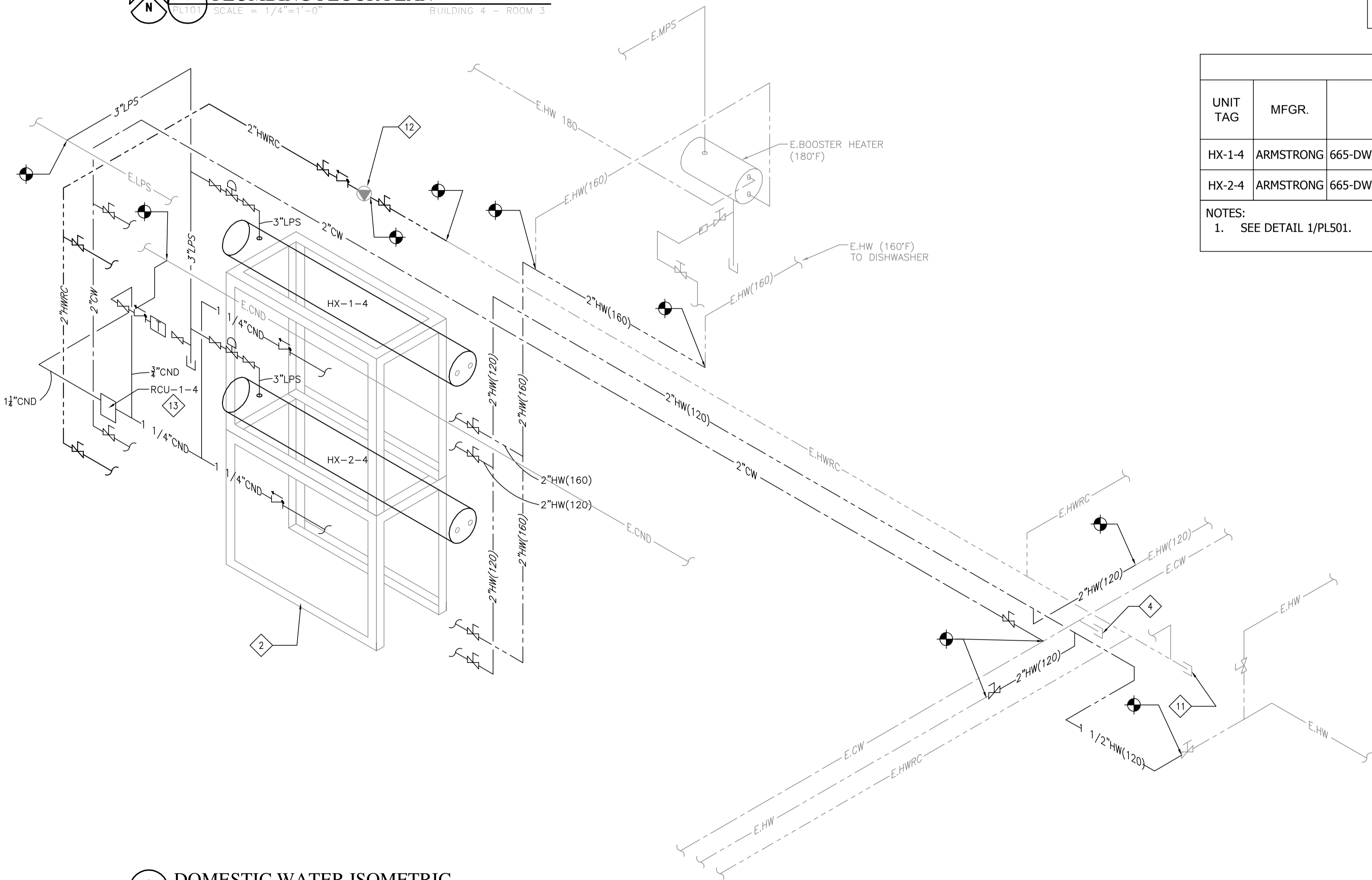
- GENERAL NOTES**
1. PLUMBING CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS.
 2. ALL FLOOR AND WALL PENETRATIONS SHALL BE SEALED TO MEET FIRE RATINGS.
 3. SEE SHEET PL-001 FOR SEQUENCE OF CONSTRUCTION.

RECEIVER CONDENSATE UNIT SCHEDULE									
UNIT TAG	MFGR.	MODEL	NUMBER OF PUMPS	DISCHARGE PRESSURE PSIG	PUMP CAPACITY GPM	RECEIVER CAPACITY GALLONS	MOTOR HP	VOLTS	PHASE
RCU-1-4	HOFFMAN PUMP	WCD12-20B-MA	DUPLEX	20	18	14	1/3	120	1

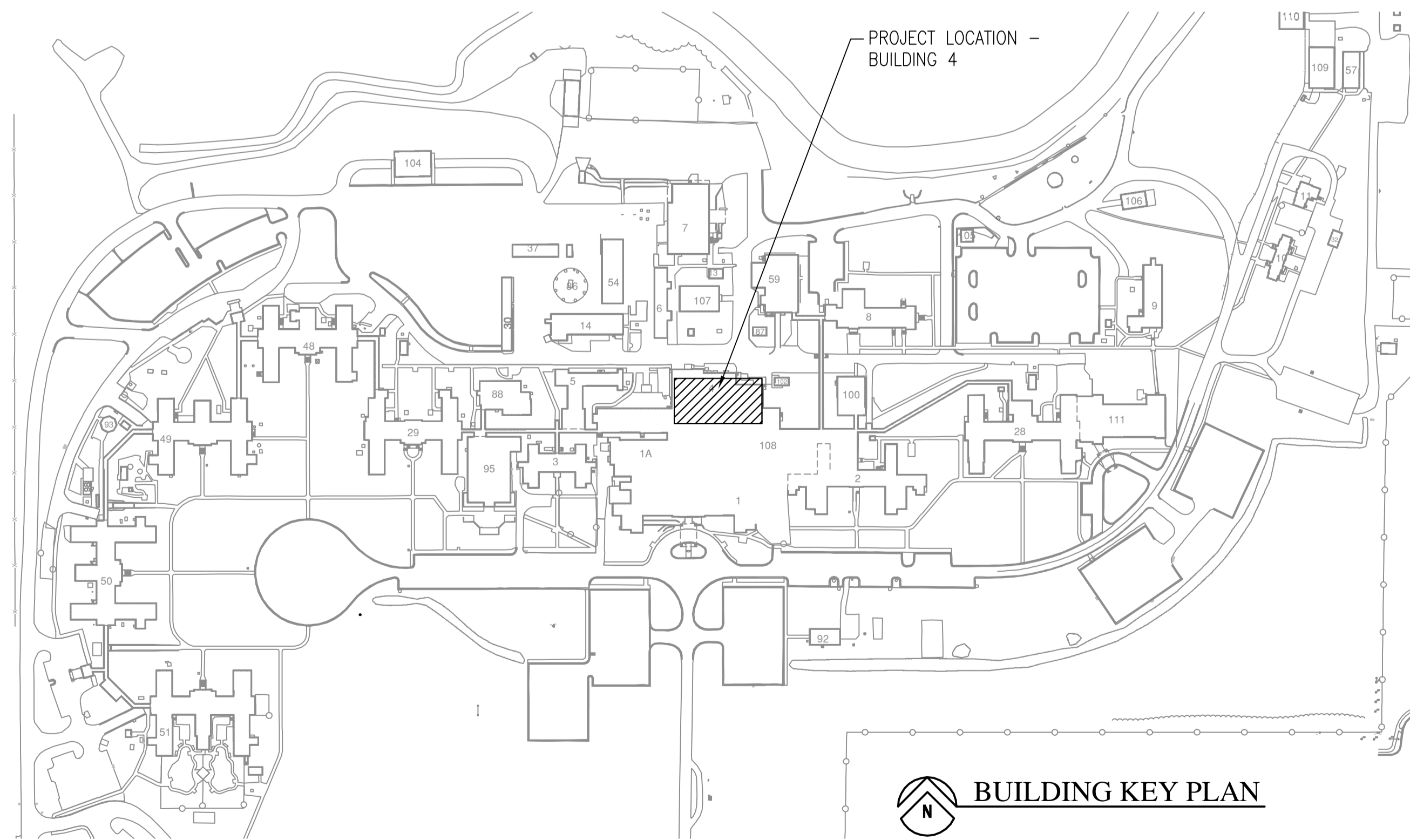
NOTES:

1. PROVIDE CAST IRON RECEIVER, TWO PUMP AND MOTOR ASSEMBLIES, DOUBLE POLE MECHANICAL ALTERNATOR.

HEAT EXCHANGER SCHEDULE												
UNIT TAG	MFGR.	MODEL	HEAT EXCHANGED (MBH)	FLUID TYPE	FLOW RATE (GPM)	FLUID PD (FT H2O)	EWT (°F)	LWT (°F) (BEFORE DRV)	LWT (°F) (AFTER DRV)	FLUID TYPE	PRESSURE (PSI)	FLUID PD (PSI)
HX-1-4	ARMSTRONG	665-DWP-PTW-DMC1-150	3,300	DOMESTIC WATER	50	10	50	160	120	STEAM	7	CONSTANT
HX-2-4	ARMSTRONG	665-DWP-PTW-DMC1-150	3,300	DOMESTIC WATER	50	10	50	160	120	STEAM	7	CONSTANT
NOTES:												
1. SEE DETAIL 1/PL501.												



2 DOMESTIC WATER ISOMETRIC
NO SCALE



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DATE: 01-15-2013

DRAWING TITLE:
PLUMBING - FLOOR PLAN, ISOMETRIC & SCHEDULES

APPROVED PROJECT DIRECTOR:

PROJECT TITLE:
HOT WATER GENERATORS

DATE:
01.15.2013

PROJECT NO.:AS NOTED

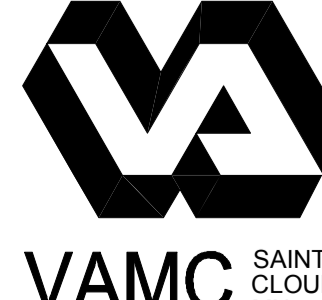
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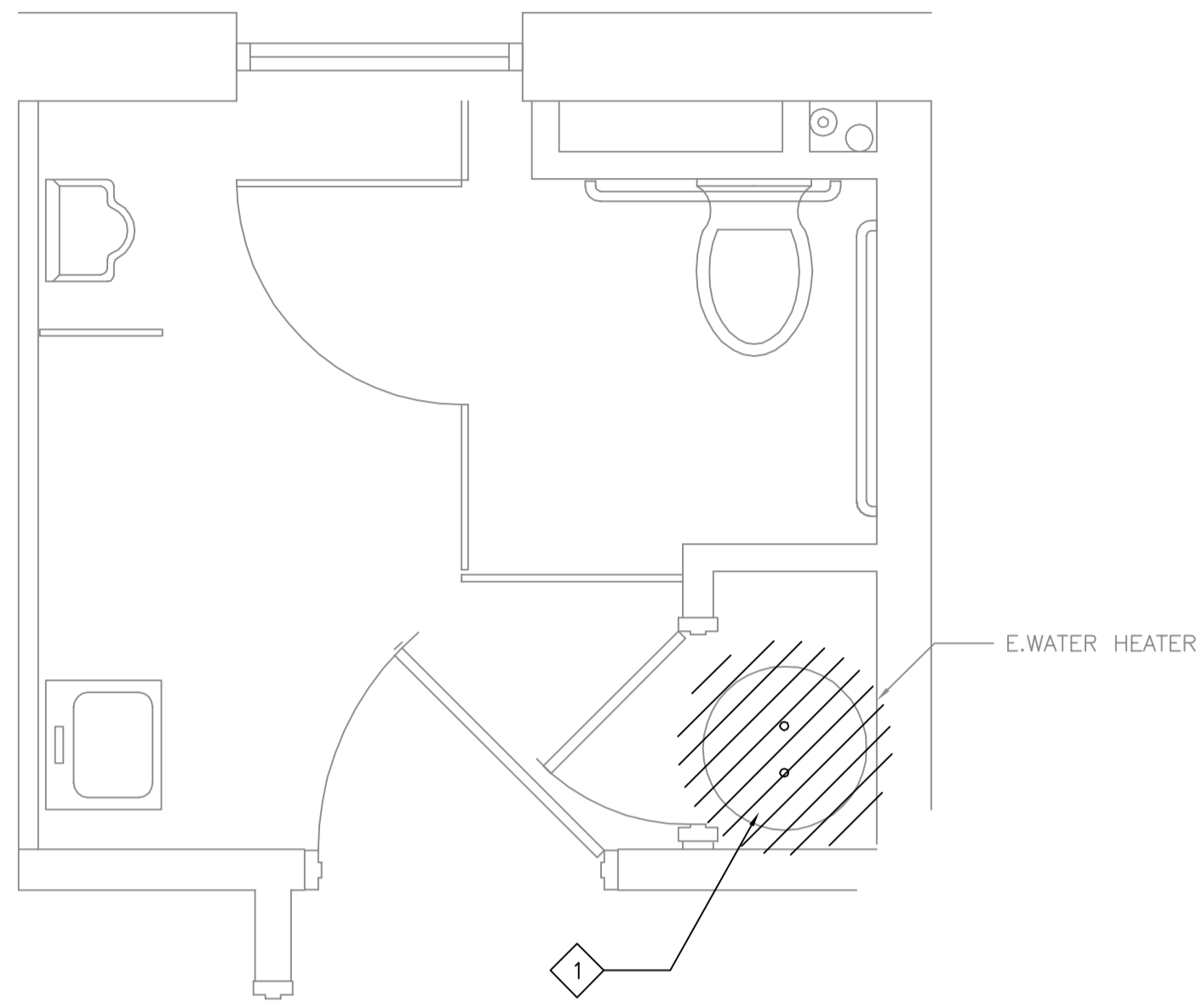
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AJF

CHECKED BY:
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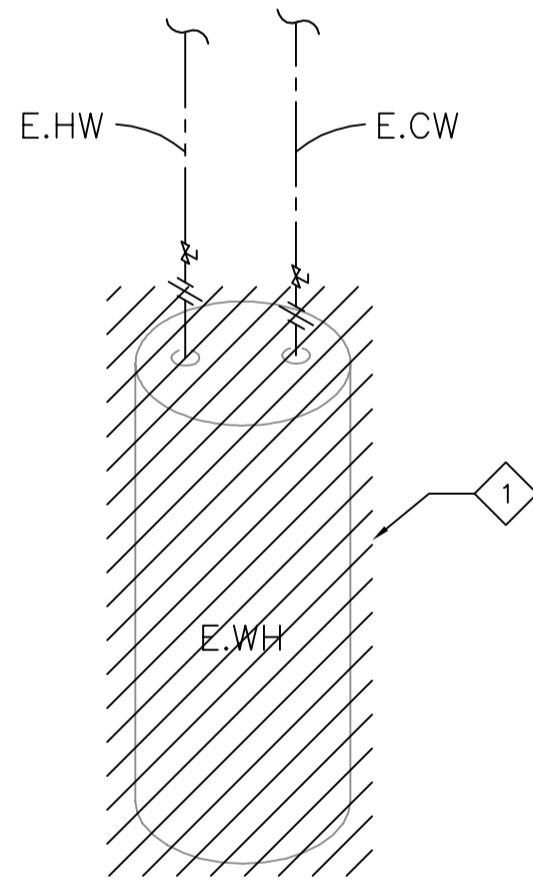
REVISION NO.:PL101-4

DATE: 01-15-2013





DEMOLITION PLAN
SCALE = 1/2"=1'-0" BUILDING 8 - ROOM 13

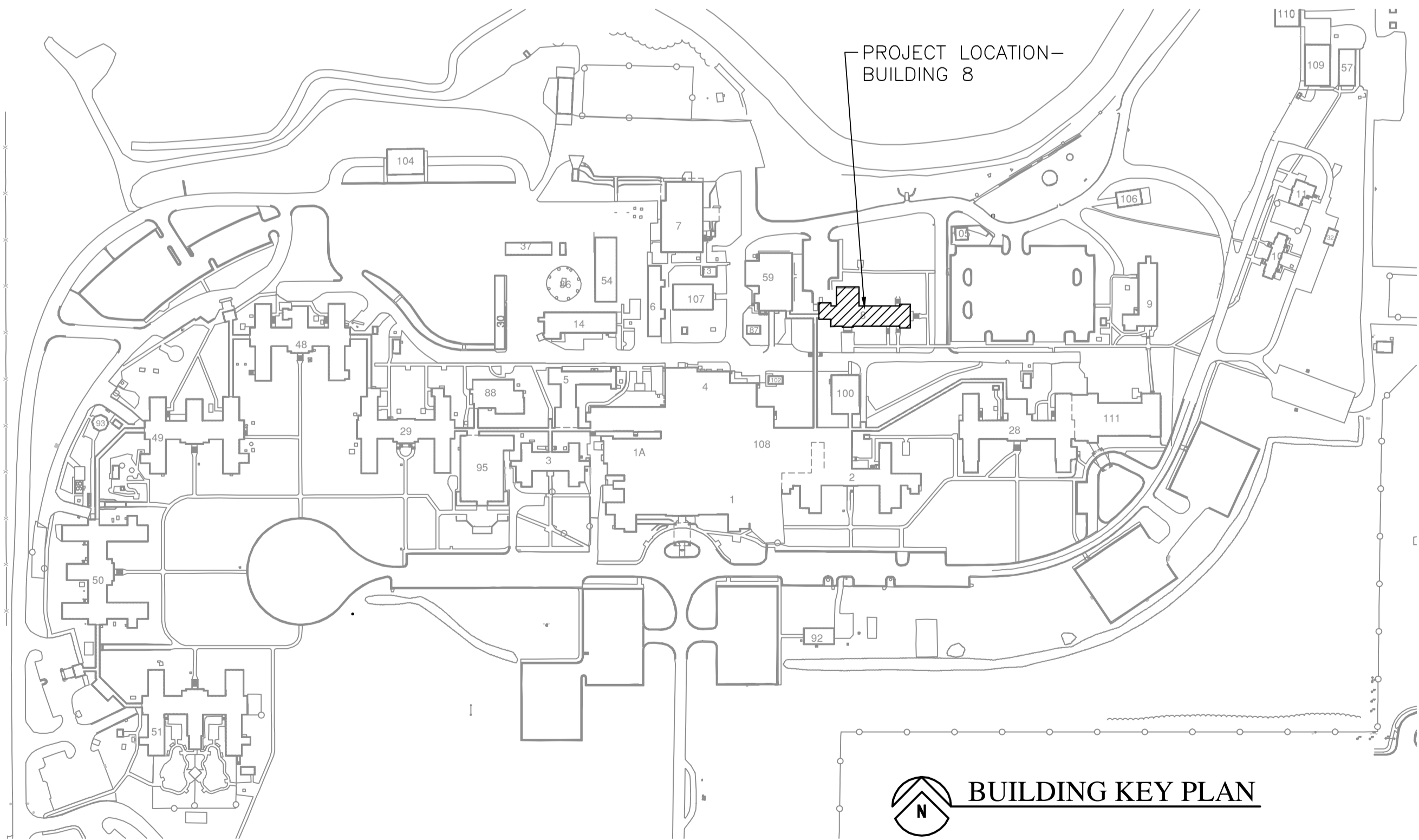


DEMOLITION ISOMETRIC
NO SCALE BUILDING 8 - ROOM 13



PICTURE 1
NO SCALE BUILDING 8 - ROOM 13

- GENERAL NOTES**
 1. PLUMBING CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS.
 2. ALL FLOOR AND WALL PENETRATIONS SHALL BE SEALED TO MEET FIRE RATINGS.
 3. ALL HATCHED ITEMS DENOTES DEMOLITION.
- PLAN NOTES**
 - 1 PLUMBING CONTRACTOR SHALL REMOVE EXISTING ELECTRIC WATER HEATER.



BUILDING KEY PLAN

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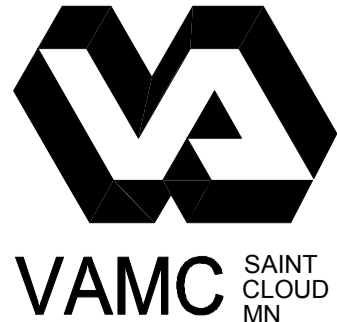
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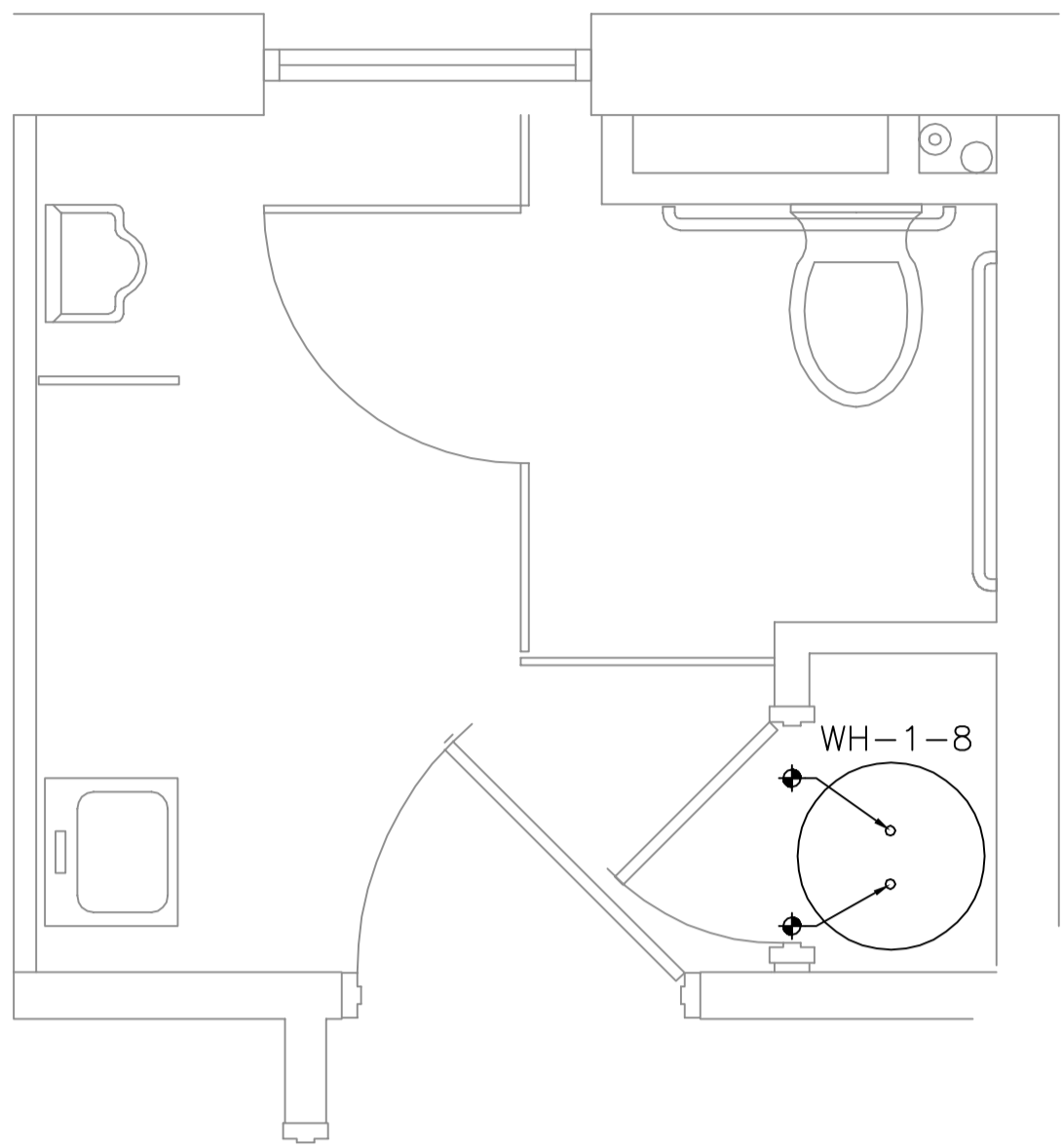
Shane T. Johnston MN 4808
SHANE T. JOHNSTON, P.E. REG. NO.
DATE: 01-15-2013

DRAWING TITLE:
**PLUMBING -
DEMOLITION PLANS**

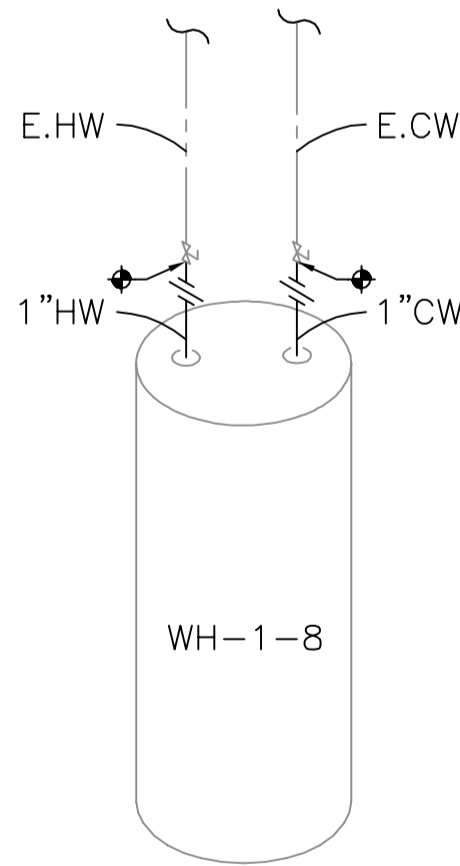
APPROVED PROJECT DIRECTOR: _____ DATE: _____

PROJECT INFO			DATE: 01.15.2013
HOT WATER GENERATORS			AS NOTED
PROJECT NO: 656-13-225			SCIP
DRAWING NO: PD101-8			REV: 7-23





PLUMBING PLAN
SCALE = 1/2"=1'-0" BUILDING 8 - ROOM 13



DOMESTIC WATER ISOMETRIC
SCALE = NO SCALE BUILDING 8 - BUILDING 13

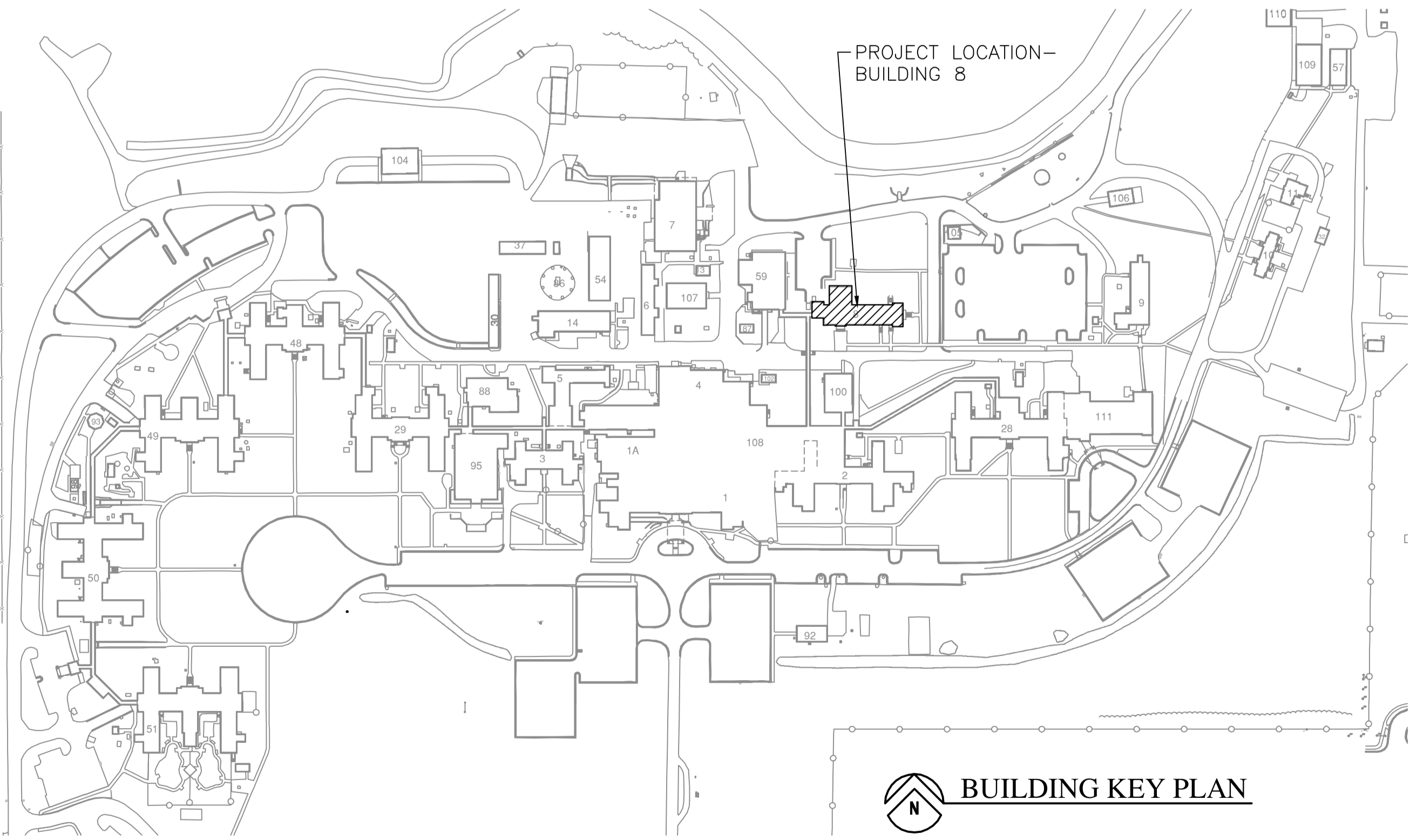
GENERAL NOTES

1. PLUMBING CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS.
2. ALL FLOOR AND WALL PENETRATIONS SHALL BE SEALED TO MEET FIRE RATINGS.
3. TEMPORARY WATER HEATER SHALL NOT BE REQUIRED FOR THIS BUILDING. PLUMBING CONTRACTOR SHALL COORDINATE WITH VA STAFF PRIOR TO REPLACEMENT OF WATER HEATER.
4. PLUMBING CONTRACTOR SHALL HIRE LICENSED ELECTRICAL CONTRACTOR TO WIRE WATER HEATER (WH-1-8).

ELECTRIC WATER HEATER SCHEDULE

UNIT TAG	MFGR.	MODEL	STORAGE CAPACITY (GAL.)	HEATING CAPACITY (WATTS)	GPH RECOVERY AT 90°F RISE	VOLTS	PHASE	LOCATION	NOTES
WH-1-8	A.O. SMITH	DRE-80-13.5	80	4500	62	240	1	ROOM 13	1

- NOTES:
1. PROVIDE TEMPERATURE AND PRESSURE RELIEF VALVE.



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Shane T. Johnston
SHANE T. JOHNSTON, P.E.
DATE: 01-15-2013

DRAWING TITLE:
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APPROVED PROJECT DIRECTOR: _____ DATE: _____

PROJECT TITLE:
HOT WATER GENERATORS

DATE: **01.15.2013**

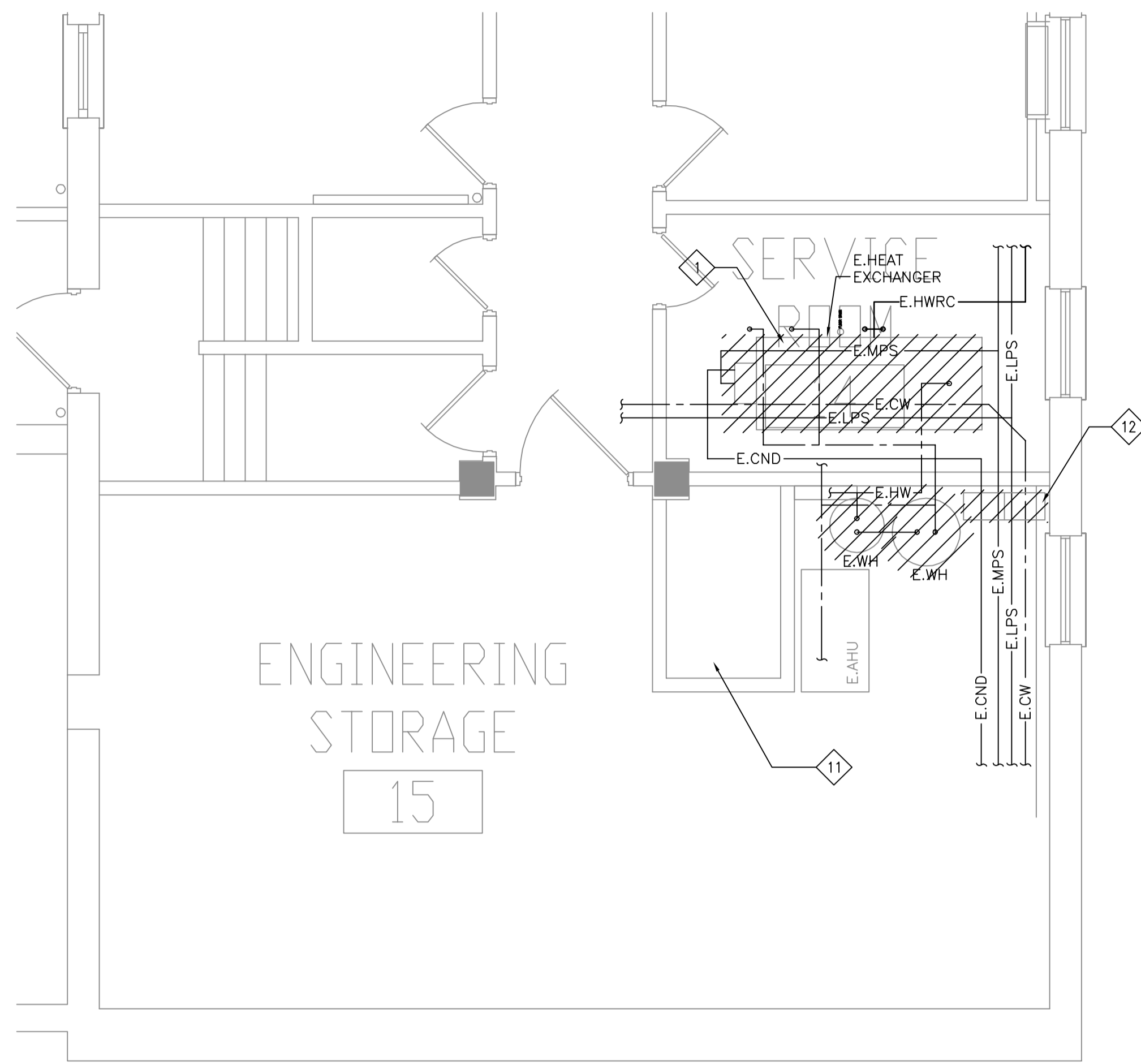
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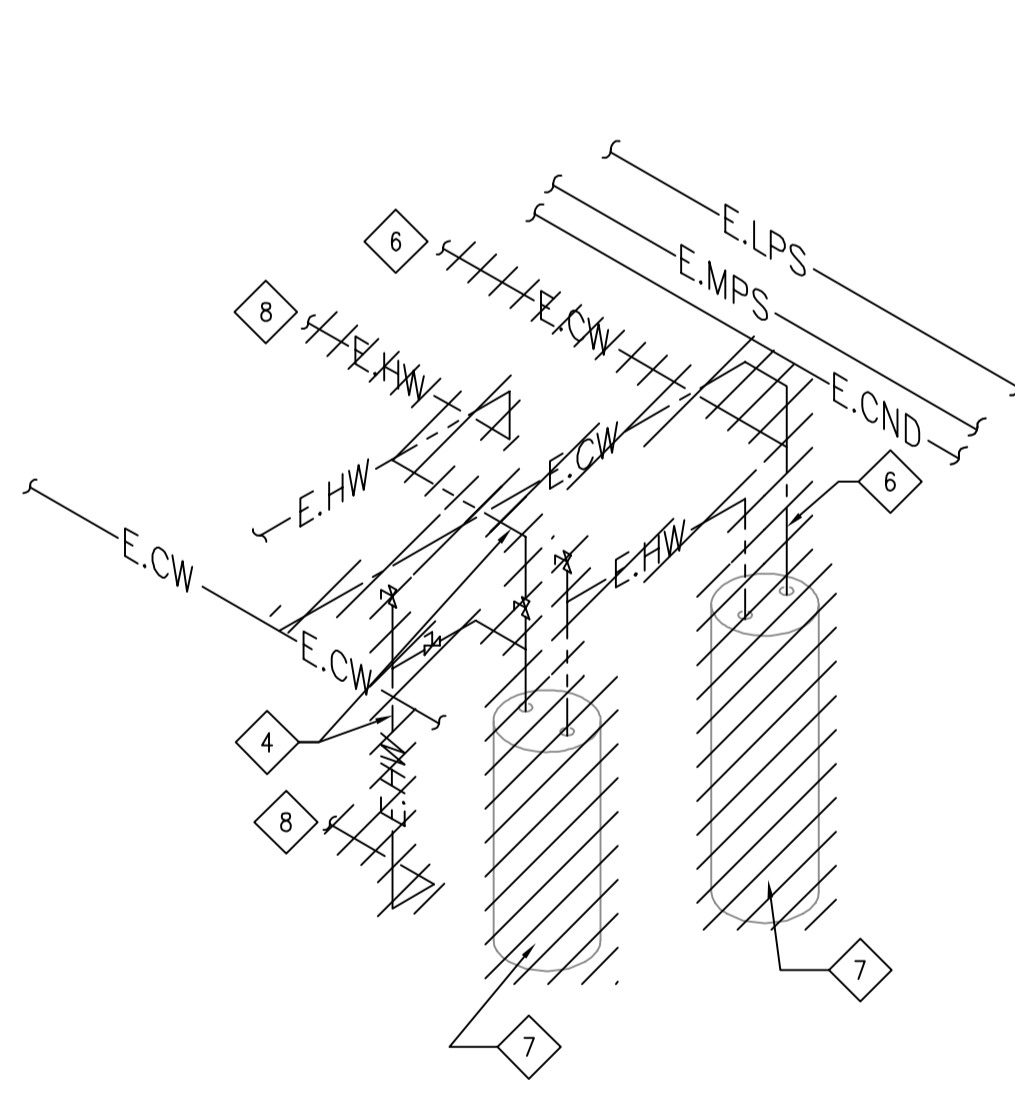
DRAWING NO.: **PL101-8**

DATE: **01-15-23**

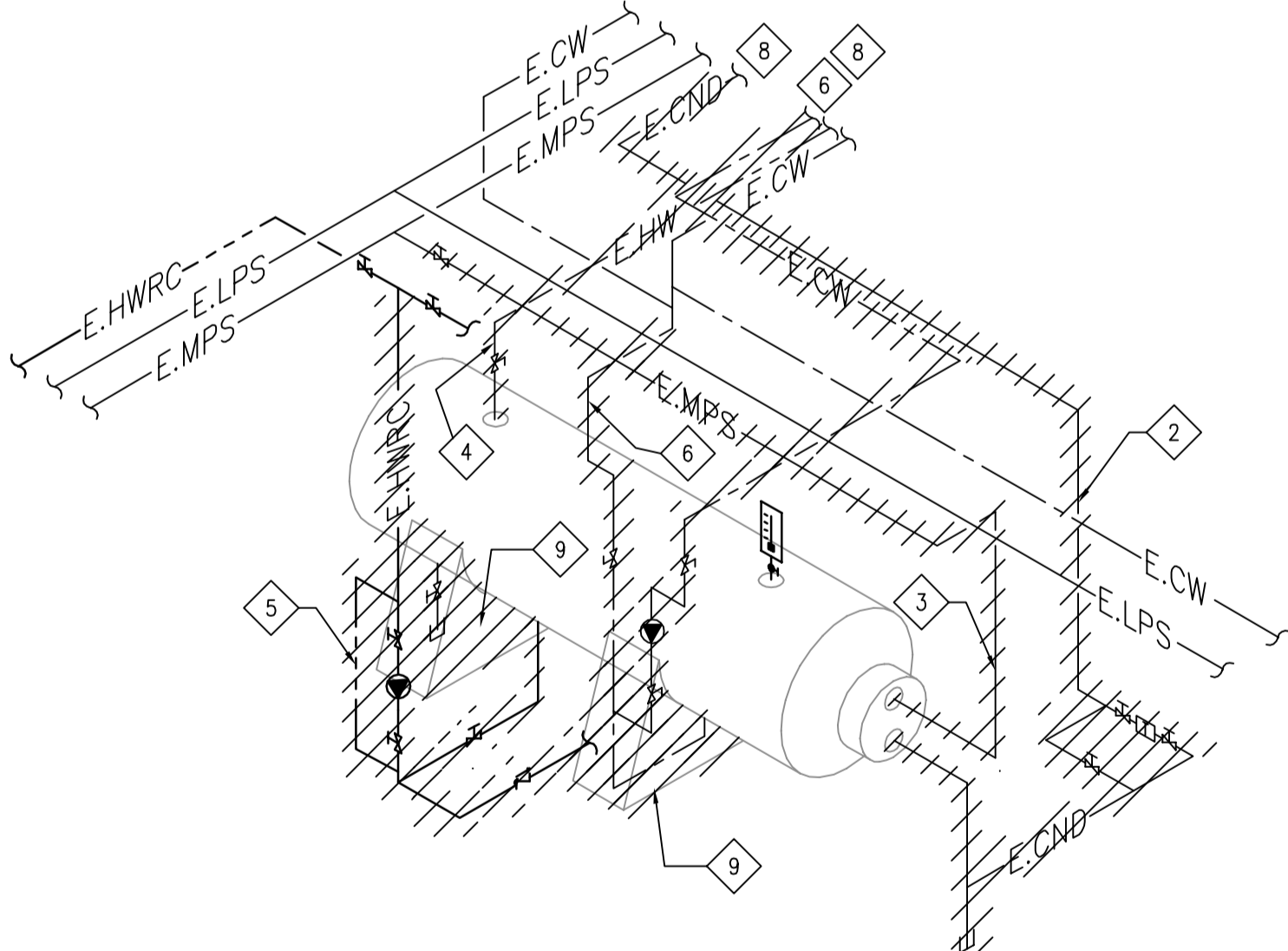




DEMOLITION PLAN
SCALE = 1/4" = 1'-0"
BUILDING 9 - ROOM 14 & 15



DEMOLITION ISOMETRIC
SCALE = 1/4" = 1'-0"
BUILDING 9 - ROOM 15



DEMOLITION ISOMETRIC
SCALE = 1/4" = 1'-0"
BUILDING 9 - ROOM 14



PICTURE 1
SCALE = 1/4" = 1'-0"
BUILDING 9 - ROOM 15



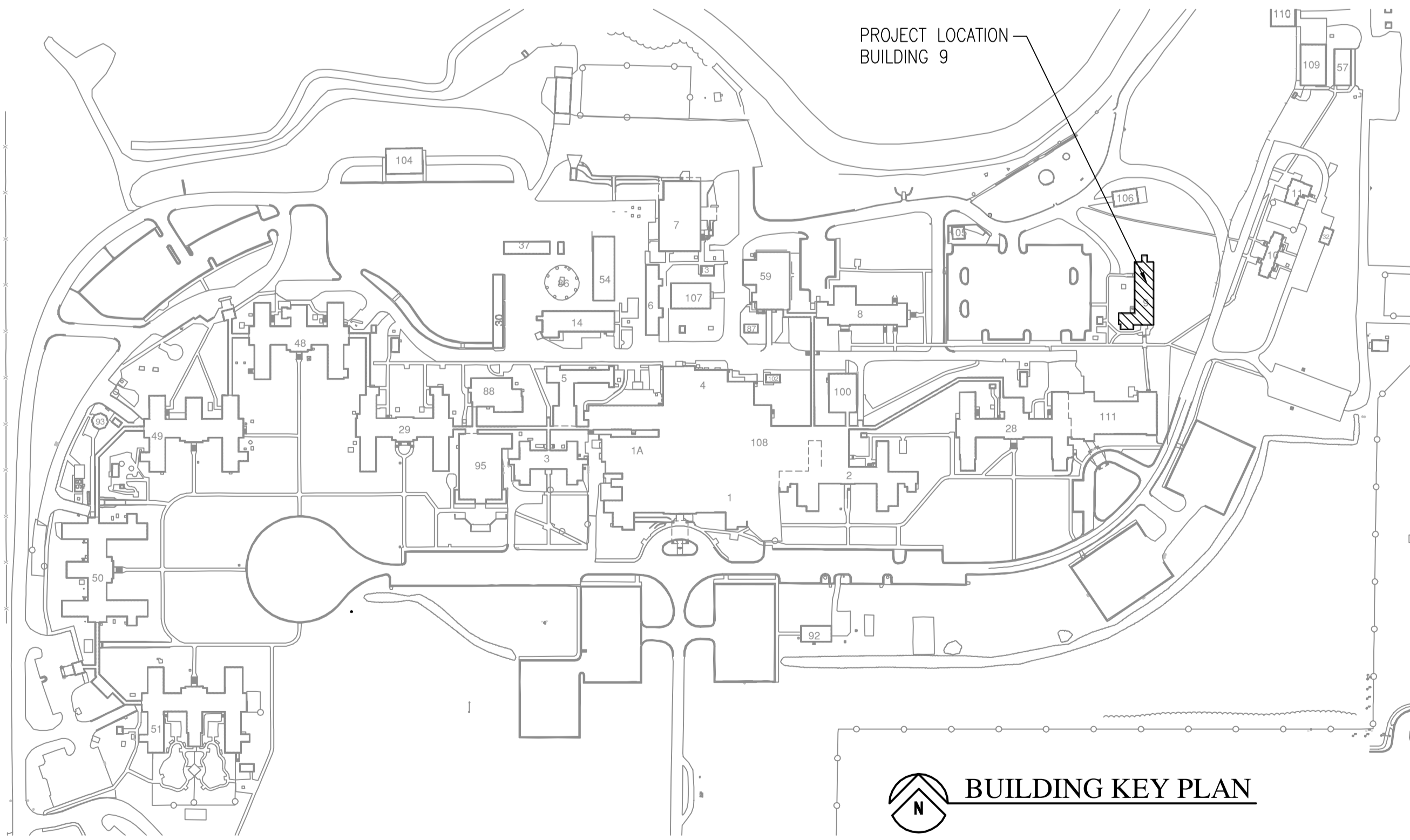
PICTURE 2
SCALE = 1/4" = 1'-0"
BUILDING 9 - ROOM 14



PICTURE 3
SCALE = 1/4" = 1'-0"
BUILDING 9 - ROOM 14

- ### GENERAL NOTES
1. PLUMBING CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS.
 2. ALL FLOOR AND WALL PENETRATIONS SHALL BE SEALED TO MEET FIRE RATINGS.
 3. ALL HATCHED ITEMS DENOTES DEMOLITION.
 4. EXISTING ELECTRIC WATER HEATERS ARE NON-OPERATIONAL. CONTRACTOR SHALL REMOVE ELECTRIC WATER HEATERS FIRST. ONCE ROOM 15 IS READY, NEW HEAT EXCHANGER HX-1-9 AND HX-2-9 SHALL BE INSTALLED. NO TEMPORARY HEAT EXCHANGER SHALL BE REQUIRED FOR THIS BUILDING. ROOM 15 SHALL BE THE PERMANENT LOCATION FOR NEW HEAT EXCHANGERS. EXISTING HEAT EXCHANGER IN ROOM 14 SHALL BE REMOVED ONCE NEW HEAT EXCHANGERS (HX-1-9 AND HX-2-9) ARE OPERATIONAL.

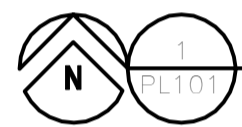
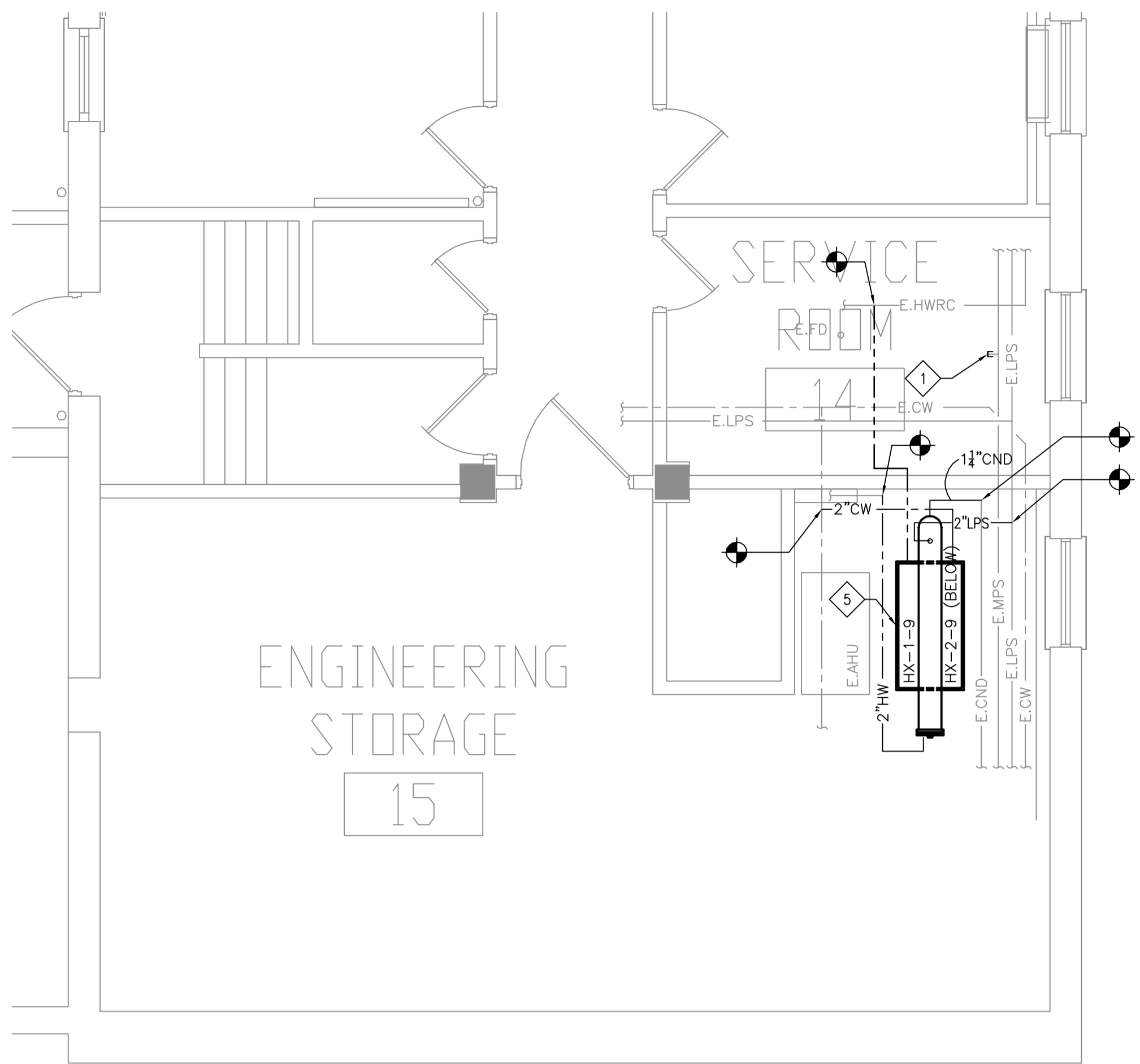
- ### PLAN NOTES
1. PLUMBING CONTRACTOR SHALL REMOVE EXISTING DOMESTIC HOT WATER TANK, INSULATION, GAUGES, AND ASSOCIATED MATERIALS.
 2. PLUMBING CONTRACTOR SHALL REMOVE EXISTING CONDENSATE PIPE, VALVES, CONDENSATE TRAP, AND ASSOCIATED INSULATION AND HANGERS.
 3. PLUMBING CONTRACTOR SHALL REMOVE EXISTING MEDIUM PRESSURE STEAM PIPE, CONTROL VALVE, AND ASSOCIATED INSULATION AND HANGERS.
 4. PLUMBING CONTRACTOR SHALL REMOVE EXISTING DOMESTIC HOT WATER PIPE AND ASSOCIATED INSULATION AND HANGERS.
 5. PLUMBING CONTRACTOR SHALL REMOVE EXISTING DOMESTIC HOT WATER RECIRC. PIPE, VALVES, AND ASSOCIATED INSULATION AND HANGERS.
 6. PLUMBING CONTRACTOR SHALL REMOVE EXISTING DOMESTIC COLD WATER PIPE, VALVES, AND INSULATION AND HANGERS.
 7. PLUMBING CONTRACTOR SHALL REMOVE EXISTING ELECTRIC WATER HEATER. PLUMBING CONTRACTOR SHALL HIRE A LICENSED ELECTRICAL CONTRACTOR TO DISCONNECT AND REMOVE ALL ASSOCIATED ELECTRICAL (CONDUIT, CONDUCTORS, DISCONNECTS, ETC) WITH EXISTING WATER HEATER. PROVIDE NEW TYPED PANEL DIRECTORY IN EXISTING PANEL AFTER WORK IS COMPLETE.
 8. PLUMBING CONTRACTOR SHALL PATCH WALL PENETRATION TO MATCH EXISTING FINISH.
 9. PLUMBING CONTRACTOR SHALL REMOVE EXISTING CONCRETE STAND. PATCH FLOOR TO MATCH EXISTING FLOOR CONDITIONS.
 10. PLUMBING CONTRACTOR SHALL RELOCATE EXISTING HOT WATER RECIRCULATION PUMP. SEE 2/PL101-9 FOR NEW PUMP LOCATION. PLUMBING CONTRACTOR SHALL HIRE A LICENSE ELECTRICAL CONTRACTOR TO RELOCATE ALL ASSOCIATED ELECTRICAL (CONDUIT, CONDUCTORS, DISCONNECTS, ETC) WITH EXISTING PUMP. EXTEND ALL EXISTING ELECTRICAL CONDUIT, ETC. AS REQUIRED FROM THIS LOCATION TO NEW LOCATION SHOWN ON 2/PL101-9. PROVIDE NEW CONDUCTORS, NO SPLICING IS ALLOWED.
 11. EXISTING IT ROOM, DO NOT CROSS.
 12. EXISTING LOCKERS SHALL BE RELOCATED BY OWNER. PLUMBING CONTRACTOR SHALL COORDINATE WITH VA-COR.
 13. PLUMBING CONTRACTOR SHALL REMOVE EXISTING PUMP. PLUMBING CONTRACTOR SHALL HIRE A LICENSE ELECTRICAL CONTRACTOR TO REMOVE ALL ASSOCIATED ELECTRICAL (CONDUIT, CONDUCTORS, DISCONNECTS, ETC) WITH EXISTING PUMP. PROVIDE NEW TYPED PANEL DIRECTORY IN EXISTING PANEL AFTER WORK IS COMPLETE. VA HAS FIRST RIGHT OF REFUSAL.



BUILDING KEY PLAN

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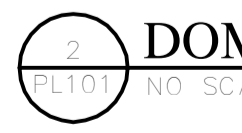
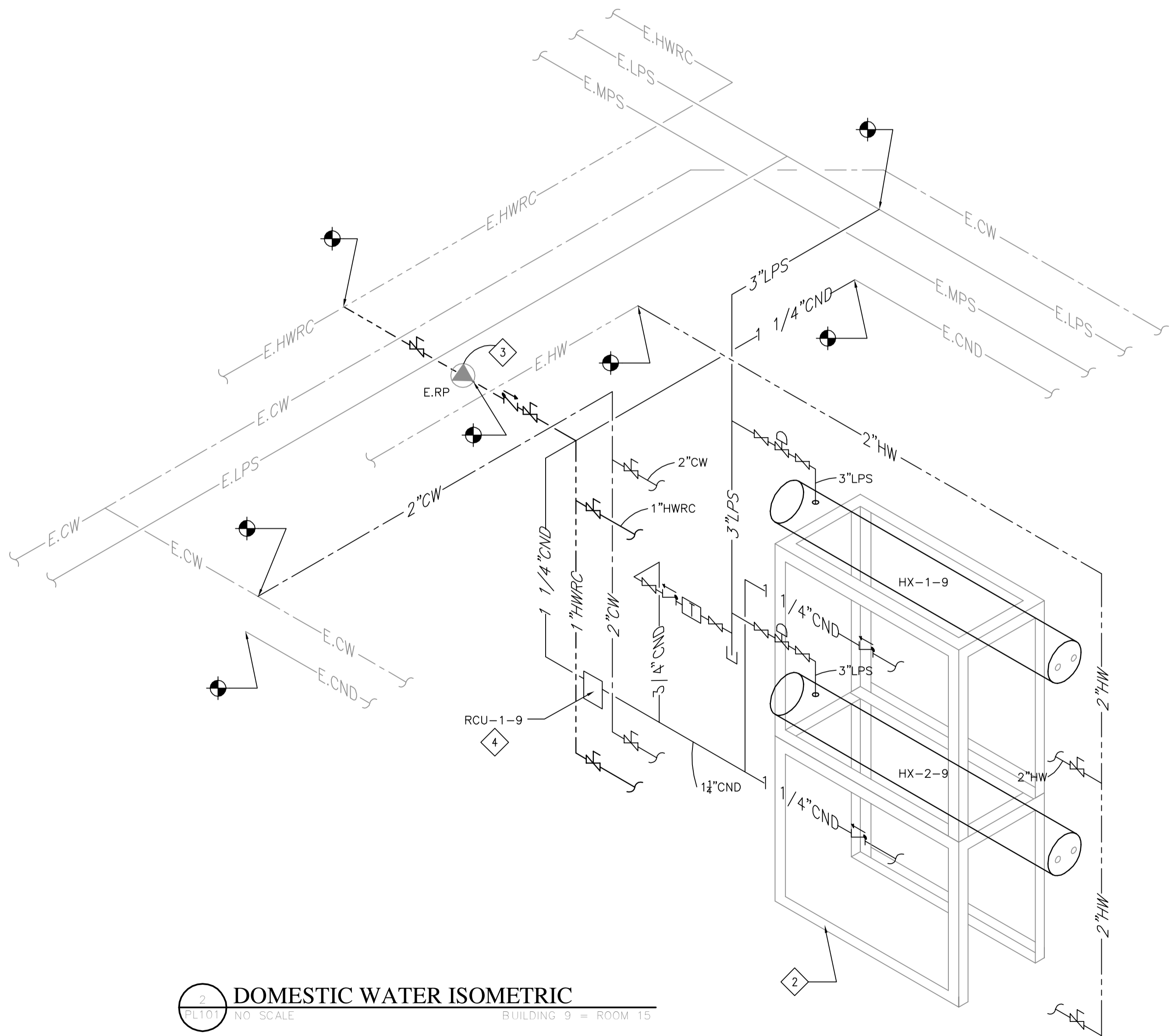
Design Tree ENGINEERING AND LAND SURVEYING Alexandria Office 120 17th Avenue W. Alexandria, MN 56308 (320) 752-1290	St. Cloud Office 5399 West St. Germain, Suite 250 St. Cloud, MN 56301 (320) 217-9557	JLG architects Alexandria 525 Broadway Street Alexandria, MN 56308 phone 320.759.9030 fax 320.759.9062 www.jlgarchitects.com copyright © 2012 JLG 11050M	STAMP SEAL I HEREBY CERTIFY THAT THIS PLAN SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SHANE T. JOHNSON, P.E. DATE: 01-15-2013	DRAWING TITLE PLUMBING - DEMOLITION PLANS	APPROVED PROJECT DIRECTOR DATE:	PROJECT TITLE HOT WATER GENERATORS	DATE 01.15.2013	PROJECT NO. AS NOTED	DRAWING NO. 656-13-225	SCIP XXXX	VAMC SAINT CLOUD MN



PLUMBING PLAN

SCALE = 1/4"=1'-0"

BUILDING 9 - ROOM 14 & 15



DOMESTIC WATER ISOMETRIC

SCALE = 1/16"=1'-0"

BUILDING 9 - ROOM 15

- GENERAL NOTES**
1. PLUMBING CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS.
 2. ALL FLOOR AND WALL PENETRATIONS SHALL BE SEALED TO MEET FIRE RATINGS.
 3. SEE SHEET PL-001 FOR SEQUENCE OF CONSTRUCTION.

- PLAN NOTES**
1. CAP MEDIUM PRESSURE STEAM PIPE.
 2. PLUMBING CONTRACTOR SHALL PROVIDE AND INSTALL PRE-MANUFACTURED HEAT EXCHANGER SKID. SKID SHALL BE PRE-PIPE INCLUDING VALVES, GAUGES AND FITTINGS AS SHOWN ON 1/PL501. CONTROLS CONTRACTOR SHALL PROVIDE HEAT EXCHANGER MANUFACTURER REQUIRED FLOW SWITCHES AND TEMPERATURE GAUGES. HEAT EXCHANGER MANUFACTURER SHALL INSTALL FLOW SWITCHES AND TEMPERATURE GAUGES PRIOR TO SHIPMENT. PLUMBING CONTRACTOR, CONTROLS CONTRACTOR AND MANUFACTURER SHALL COORDINATE.
 3. EXISTING HOT WATER RECIRC. PUMP RELOCATED.
 4. PLUMBING CONTRACTOR SHALL HIRE A LICENSED ELECTRICAL CONTRACTOR TO WIRE CONDENSATE PUMP. ELECTRICAL CONTRACTOR SHALL WIRE PUMP BACK TO NEAREST EXISTING ELECTRICAL PANEL WITH SPARE CAPACITY AND PROVIDE A 20 AMP BREAKER. NO SPLICING ALLOWED. PROVIDE A NEW TYPED PANEL DIRECTORY IN EXISTING PANEL AFTER WORK IS COMPLETE.
 5. PLUMBING CONTRACTOR SHALL HIRE A LICENSED ELECTRICAL CONTRACTOR TO PROVIDE 120V POWER TO THE DIGITAL MIXING VALVE, TYPICAL TWO PER SKID. SEE 1/PL501 FOR LOCATION OF MIXING VALVES ON SKID. MIXING VALVES SHALL BE WIRED BACK TO A SPARE 20 AMP BREAKER ON A EXISTING EMERGENCY ELECTRICAL PANEL. PANEL LOCATED IN ENGINEERING STORAGE ROOM 15, EXACT PANEL LOCATION SHALL BE VERIFIED DURING PRE-BID WALK-THRU. PROVIDE NEW TYPED PANEL DIRECTORY IN EXISTING PANEL AFTER WORK IS COMPLETE. NO SPLICING ALLOWED.

HEAT EXCHANGER SCHEDULE												
UNIT TAG	MFGR.	MODEL	HEAT ENHANCED (MBH)	FLUID TYPE	FLOW RATE (GPM)	FLUID PD (FT H2O)	EWI (°F)	LWT (°F) (BEFORE DRV)	LWT (°F) (AFTER DRV)	FLUID TYPE	PRESSURE (PSI)	FLUID PD (PSI)
HX-1-9	ARMSTRONG	535-DWP-PTW-DMCL	1,800	DOMESTIC WATER	23	10	50	140	120	STEAM	7	CONSTANT
HX-2-9	ARMSTRONG	535-DWP-PTW-DMCL	1,800	DOMESTIC WATER	23	10	50	140	120	STEAM	7	CONSTANT

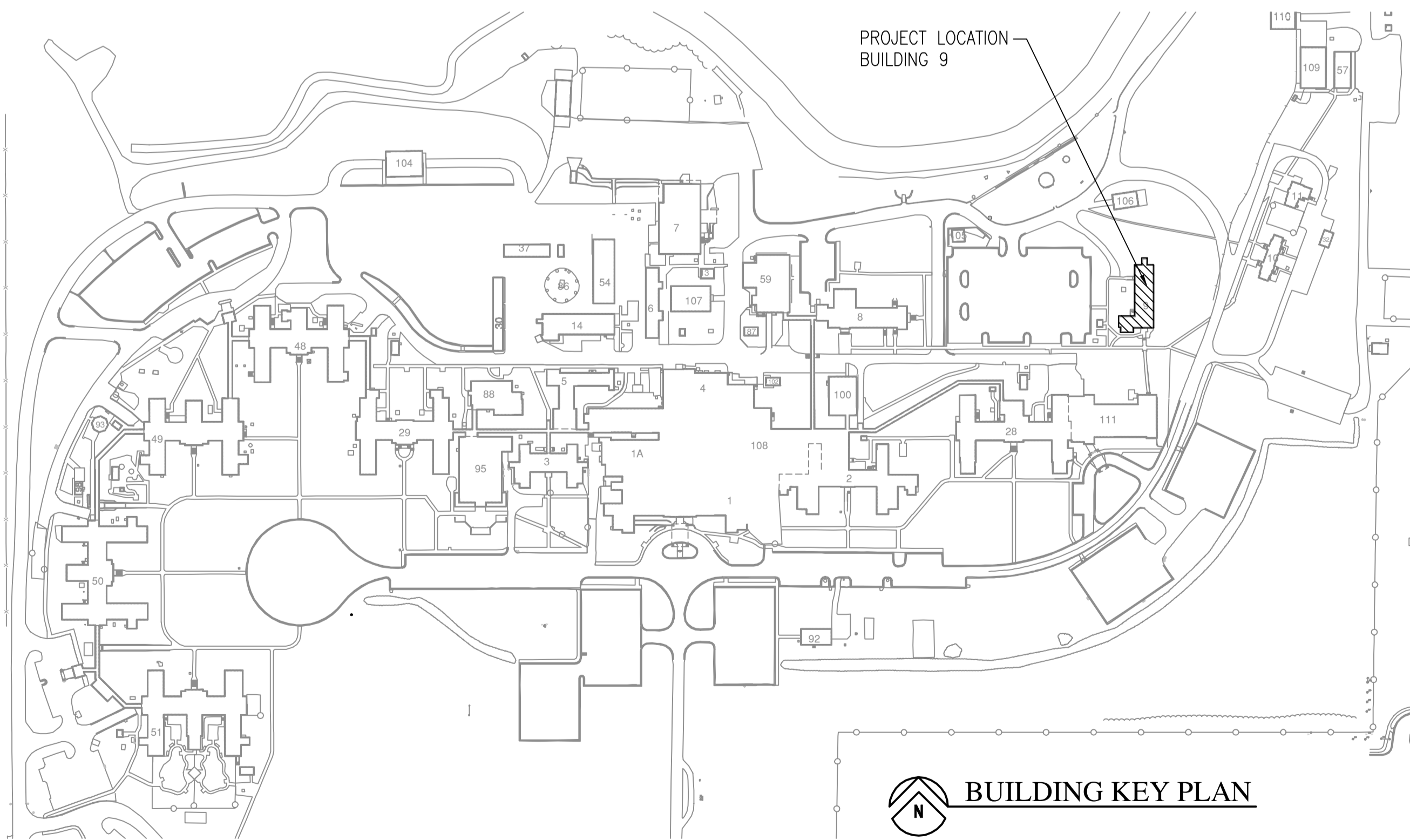
NOTES:

1. SEE DETAIL 1/PL501

RECEIVER CONDENSATE UNIT SCHEDULE									
UNIT TAG	MFGR.	MODEL	NUMBER OF PUMPS	DISCHARGE PRESSURE PSIG	PUMP CAPACITY GPM	RECEIVER CAPACITY GALLONS	MOTOR HP	VOLTS	PHASE
RCU-1-9	HOFFMAN PUMP	WCD12-20B-MA	DUPLEX	20	18	14	1/3	120	1

NOTES:

1. PROVIDE CAST IRON RECEIVER, TWO PUMP AND MOTOR ASSEMBLIES, DOUBLE POLE MECHANICAL ALTERNATOR.



BUILDING KEY PLAN

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St. Cloud Office
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HARVEY GENTRY HAS THIS PLAN PREPARED, OR REPORT WAS PREPARED BY HIM OR UNDER HIS DIRECT SUPERVISION AND THAT HE IS A LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE: 01-15-2013

DRAWING TITLE:
PLUMBING - FLOOR PLAN, ISOMETRIC & SCHEDULES

APPROVED PROJECT DIRECTOR:

PROJECT TITLE:
HOT WATER GENERATORS

DATE:
01.15.2013

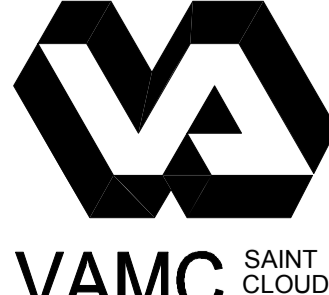
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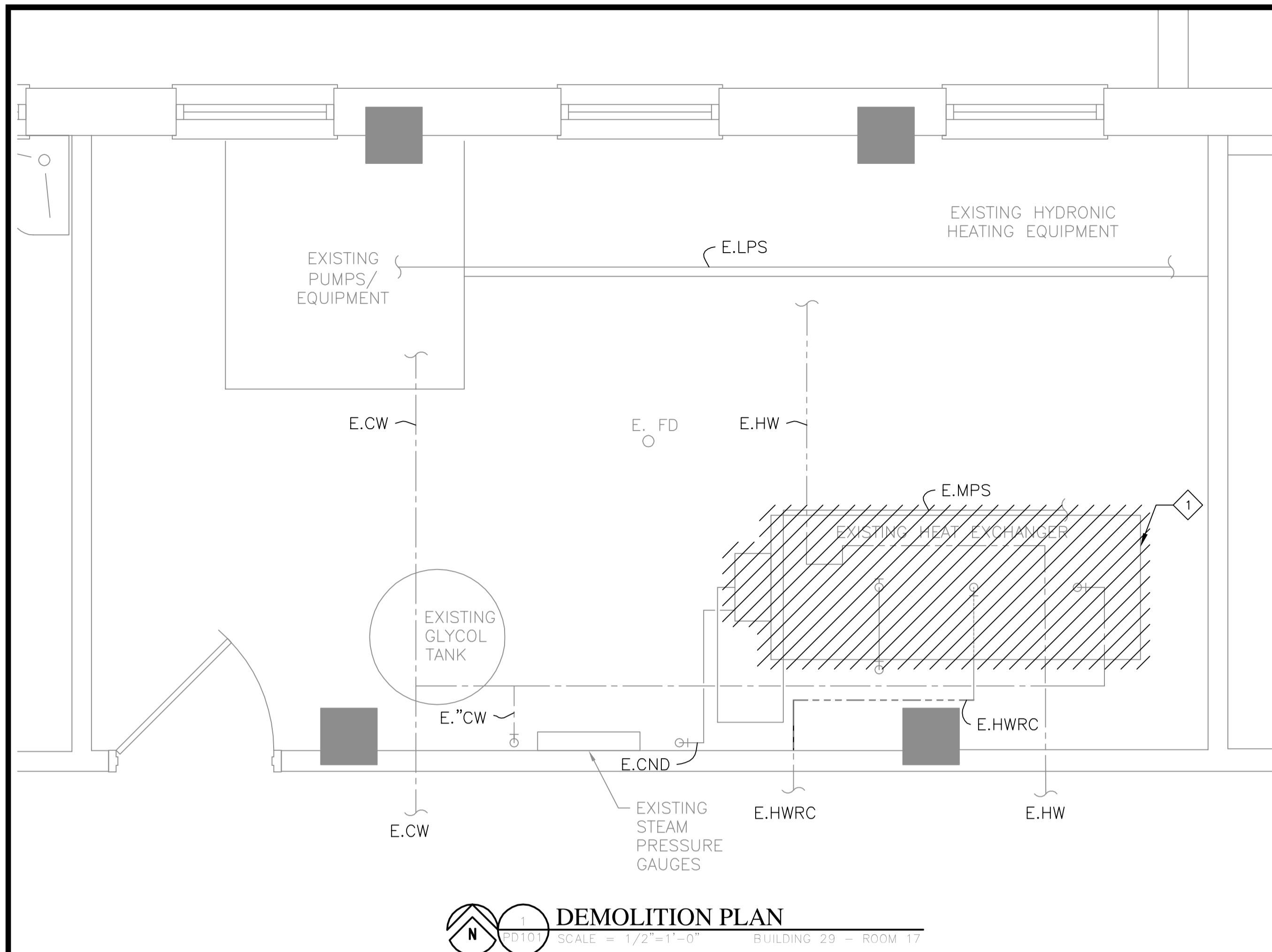
PROJECT NO:
656-13-225

SCIP:
XXXX

DRAWING NO:
PL101-9

REV. NO:
23





PICTURE 1
NO SCALE
BUILDING 29 - ROOM 17



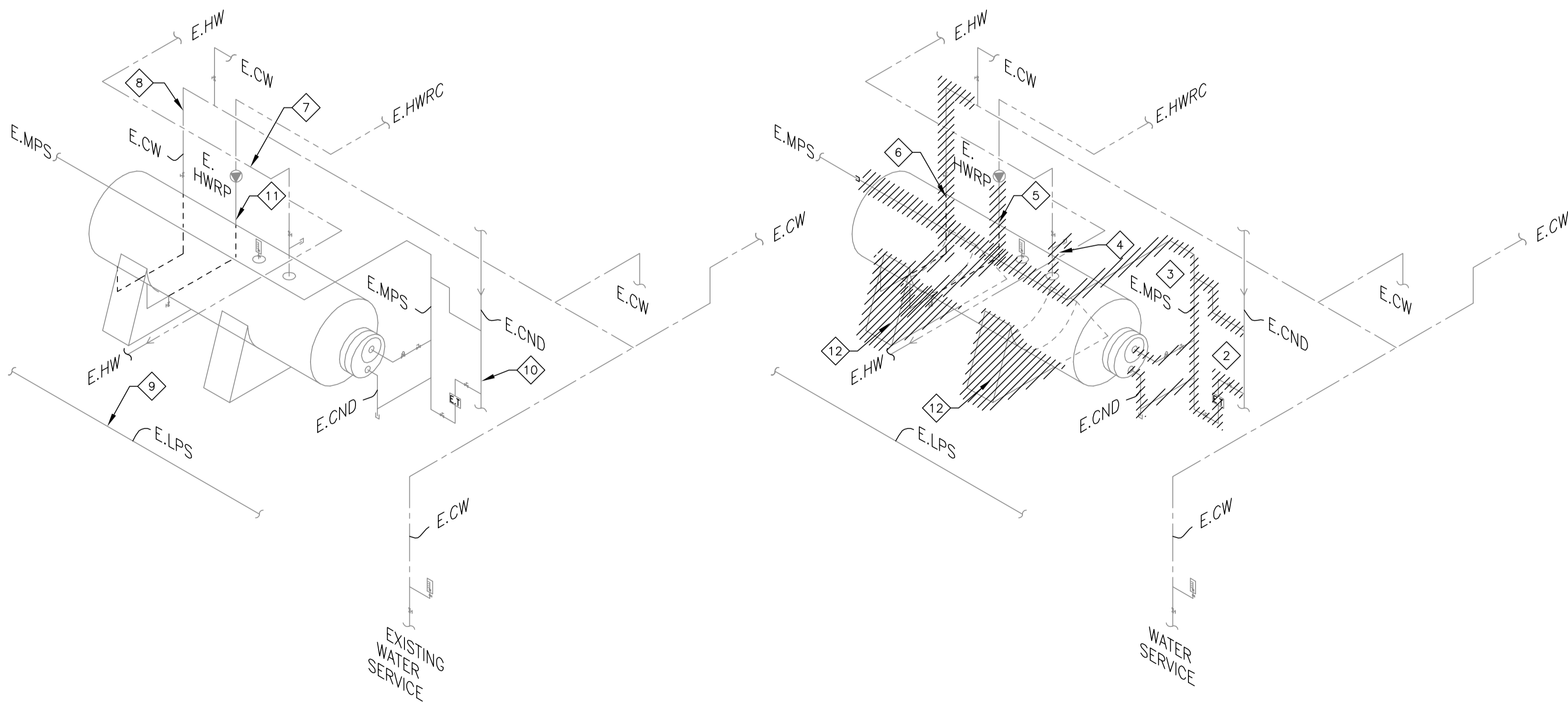
PICTURE 2
NO SCALE
BUILDING 29 - ROOM 17



PICTURE 3
NO SCALE
BUILDING 29 - ROOM 17

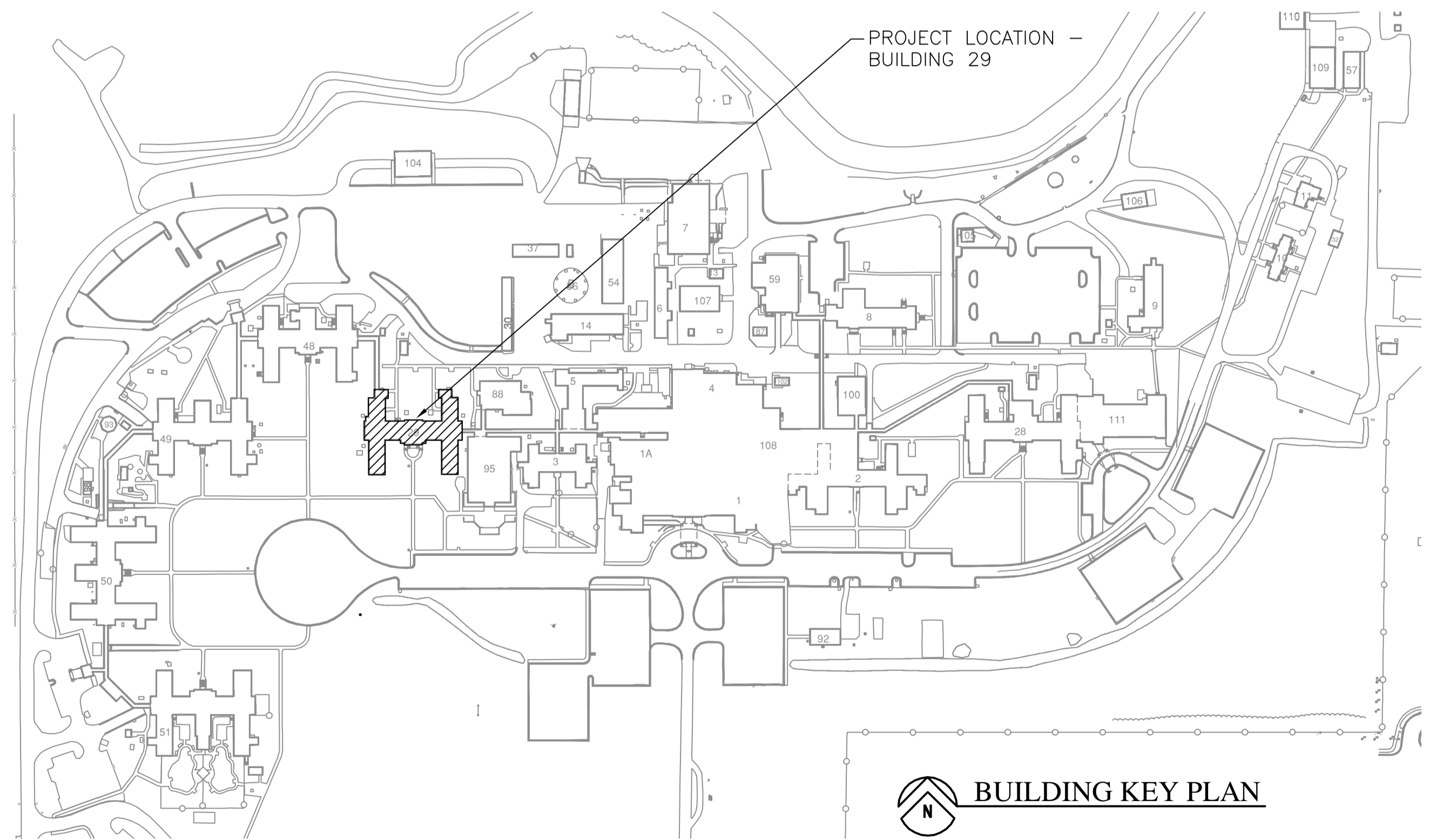
- GENERAL NOTES**
1. PLUMBING CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS.
 2. ALL FLOOR AND WALL PENETRATIONS SHALL BE SEALED TO MEET FIRE RATINGS.
 3. ALL HATCHED ITEMS DENOTES DEMOLITION.
 4. SEE SHEET PL-001 FOR SEQUENCE OF CONSTRUCTION.

- PLAN NOTES**
1. PLUMBING CONTRACTOR SHALL REMOVE EXISTING DOMESTIC HOT WATER TANK, INSULATION, GAUGES, AND ASSOCIATED MATERIALS.
 2. PLUMBING CONTRACTOR SHALL REMOVE EXISTING CONDENSATE PIPE, VALVES, CONDENSATE TRAP, AND ASSOCIATED INSULATION AND HANGERS.
 3. PLUMBING CONTRACTOR SHALL REMOVE EXISTING STEAM PIPE, CONTROL VALVE, AND ASSOCIATED INSULATION AND HANGERS. STEAM PIPE SHALL BE CAPPED AT MAIN.
 4. PLUMBING CONTRACTOR SHALL REMOVE EXISTING DOMESTIC HOT WATER PIPE, VALVES AND ASSOCIATED INSULATION AND HANGERS.
 5. PLUMBING CONTRACTOR SHALL REMOVE EXISTING DOMESTIC HOT WATER RECIRC. PIPE, VALVES, AND ASSOCIATED INSULATION AND HANGERS.
 6. PLUMBING CONTRACTOR SHALL REMOVE EXISTING DOMESTIC COLD WATER PIPE, VALVES, AND ASSOCIATED INSULATION AND HANGERS.
 7. TIE-IN POINT FOR DOMESTIC HOT WATER TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE DOMESTIC HOT WATER TO TEMPORARY HEAT EXCHANGER (THX-1). SEE SHEET PL101-29 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 8. TIE-IN POINT FOR DOMESTIC COLD WATER TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE DOMESTIC COLD WATER TO TEMPORARY HEAT EXCHANGER (THX-1) AS REQUIRED. SEE SHEET PL101-29 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 9. TIE-IN POINT FOR LOW PRESSURE STEAM TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE LOW PRESSURE STEAM TO TEMPORARY HEAT EXCHANGER (THX-1) AS REQUIRED. SEE SHEET PL101-29 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 10. TIE-IN POINT FOR CONDENSATE TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE CONDENSATE TO TEMPORARY HEAT EXCHANGER (THX-1) AS REQUIRED. SEE SHEET PL101-29 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 11. TIE-IN POINT FOR HOT WATER RECIRC TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE HOT WATER RECIRC TO TEMPORARY HEAT EXCHANGER (THX-1) AS REQUIRED FOR TEMPORARY HEAT EXCHANGER (THX-1). SEE SHEET PL101-29 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 12. PLUMBING CONTRACTOR SHALL REMOVE EXISTING CONCRETE STAND. PATCH FLOOR TO MATCH FLOOR CONDITIONS.



DEMOLITION ISOMETRIC (TEMPORARY)
NO SCALE
BUILDING 29 - ROOM 17

DEMOLITION ISOMETRIC
NO SCALE
BUILDING 29 - ROOM 17



BUILDING KEY PLAN

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No	REVISION	DATE



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HARRIS CERTIFY THAT THIS PLAN REPRESENTS
OR REPORT WAS PREPARED BY AN ENGINEER OR
DESIGN PROFESSIONAL AND THAT HE OR SHE IS
A LICENSED PROFESSIONAL ENGINEER UNDER THE
LAWS OF THE STATE OF MINNESOTA.

DATE: 01-15-2013

DRAWING TITLE:
PLUMBING -
DEMOLITION PLANS

APPROVED PROJECT DIRECTOR:

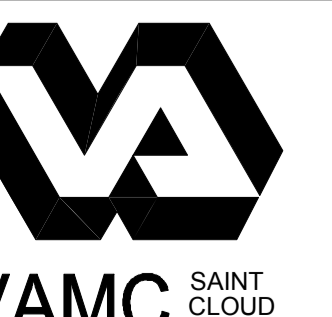
PROJECT TITLE:
HOT WATER GENERATORS

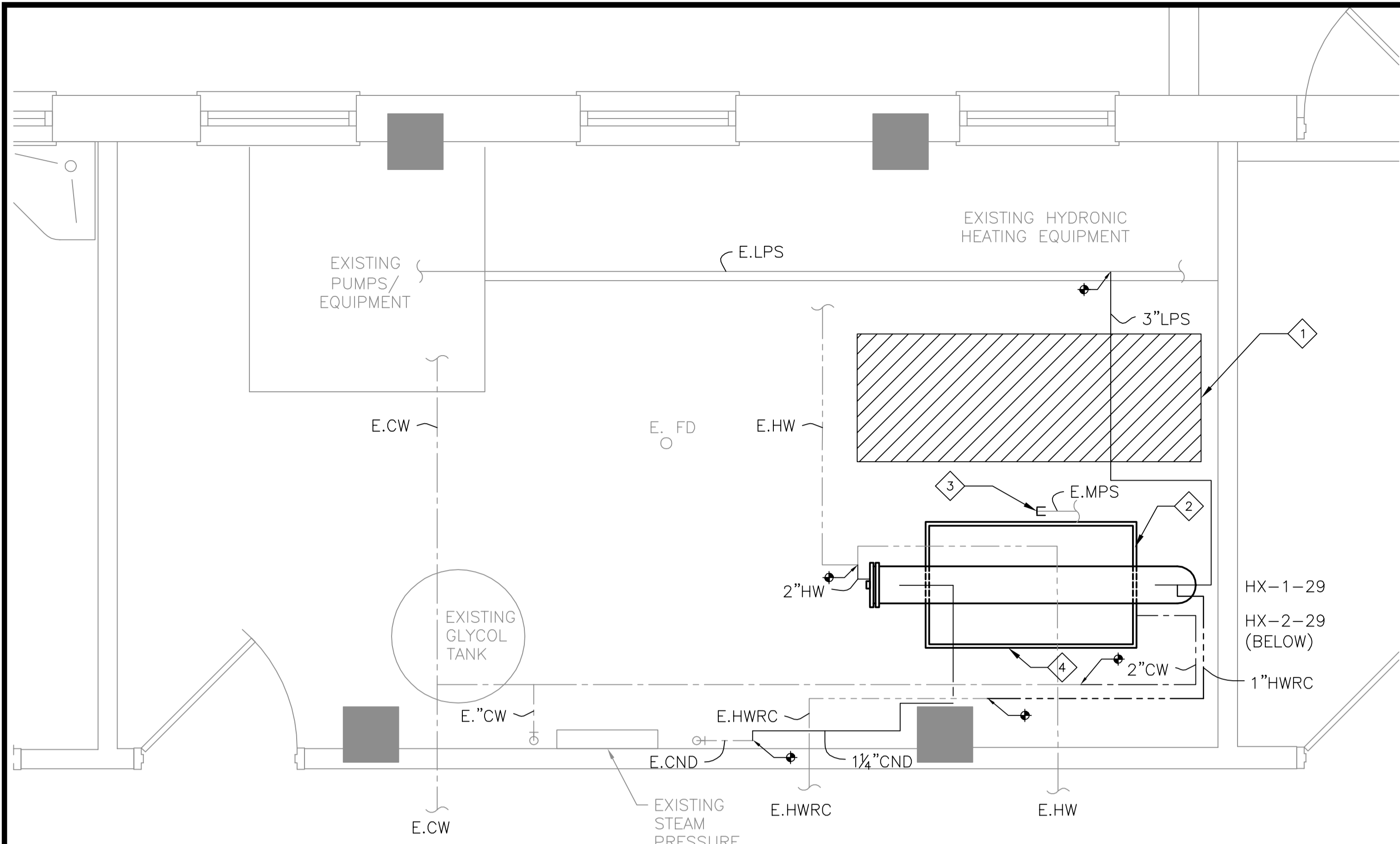
DATE: 01.15.2013

AS NOTED
AS NOTED
656-13-225
SCIP

NO. OF SHEETS
XXX

DRAWING NO.
PD101-29
REV. 11-23





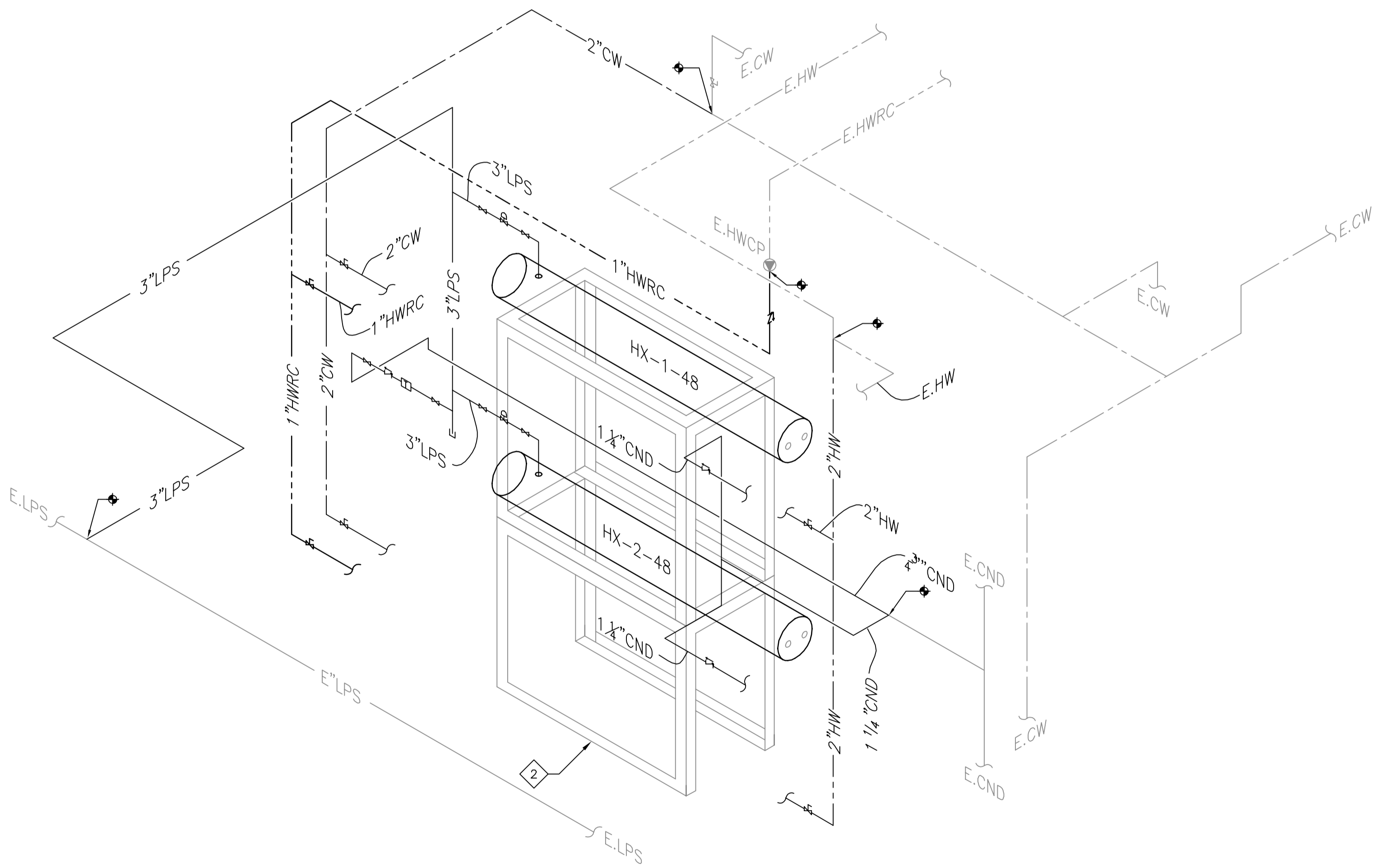
PLUMBING FLOOR PLAN
SCALE: 1/4" = 1'-0" BUILDING 29 - ROOM 17

- GENERAL NOTES**
1. PLUMBING CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS.
 2. ALL FLOOR AND WALL PENETRATIONS SHALL BE SEALED TO MEET FIRE RATINGS.
 3. SEE SHEET PL-001 FOR SEQUENCE OF CONSTRUCTION.

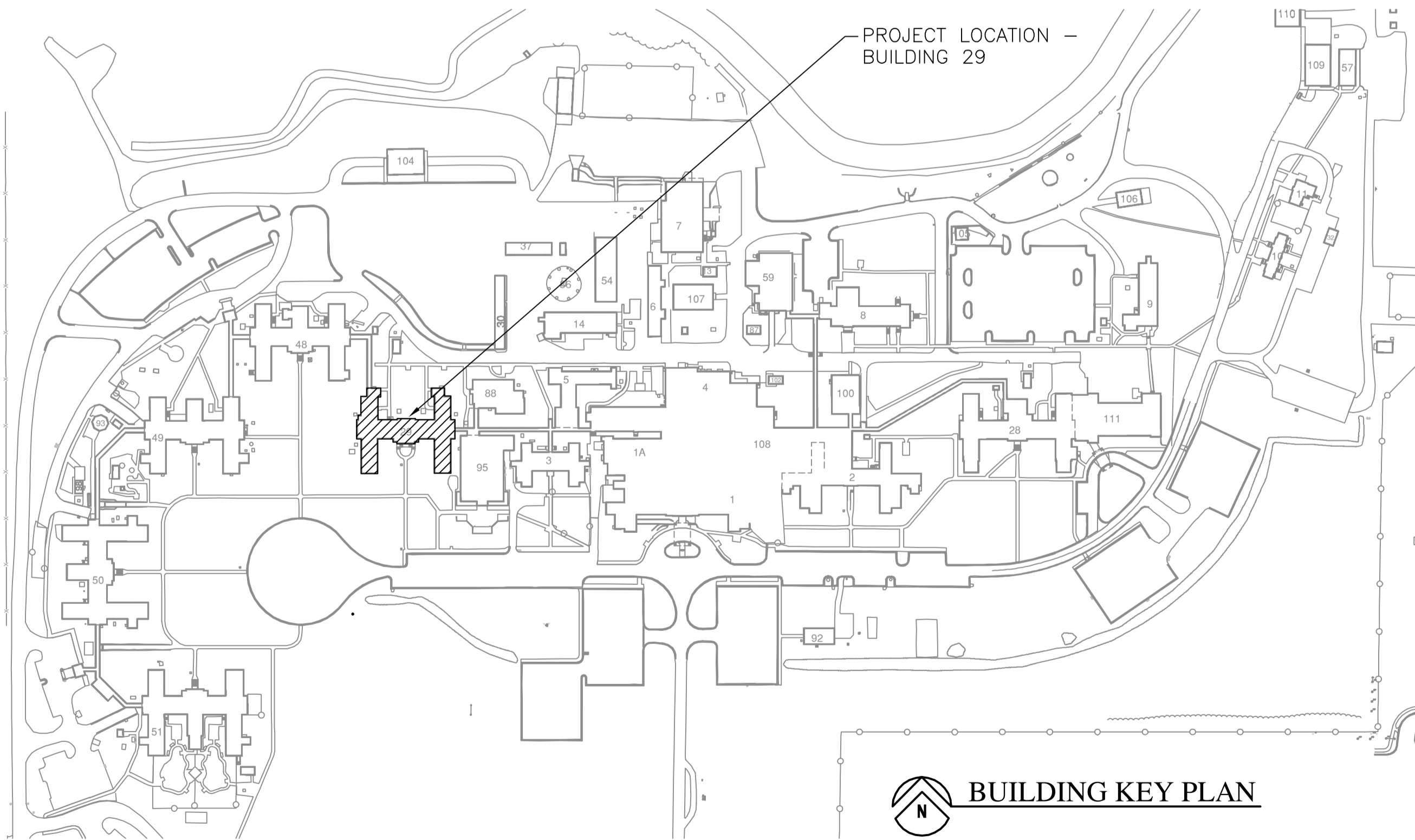
- PLAN NOTES**
1. TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 2. PLUMBING CONTRACTOR SHALL PROVIDE AND INSTALL PRE-MANUFACTURED HEAT EXCHANGER SKID. SKID SHALL BE PRE-PIPED INCLUDING VALVES, GAUGES AND FITTINGS AS SHOWN ON DETAIL 1/PL501. CONTROLS CONTRACTOR SHALL PROVIDE HEAT EXCHANGER MANUFACTURER REQUIRED FLOW SWITCHES AND TEMPERATURE GAUGES. HEAT EXCHANGER MANUFACTURER SHALL INSTALL FLOW SWITCHES AND TEMPERATURE GAUGES PRIOR TO SHIPMENT. PLUMBING CONTRACTOR, CONTROLS CONTRACTOR AND MANUFACTURER SHALL COORDINATE.
 3. CAP EXISTING MEDIUM PRESSURE STEAM.
 4. PLUMBING CONTRACTOR SHALL HIRE A LICENSED ELECTRICAL CONTRACTOR TO PROVIDE 120V POWER TO THE DIGITAL MIXING VALVE. TYPICAL TWO PER SKID. SEE 1/PL501 FOR LOCATION OF MIXING VALVES ON SKID. MIXING VALVES SHALL BE WIRED BACK TO A SPARE 20 AMP BREAKER ON A EXISTING EMERGENCY ELECTRICAL PANEL. PANEL LOCATED IN ELECTRICAL ROOM 12. EXACT PANEL LOCATION SHALL BE VERIFIED DURING PRE-BID WALK-THRU. PROVIDE NEW TYPED PANEL DIRECTORY IN EXISTING PANEL AFTER WORK IS COMPLETE. NO SPLICING ALLOWED.

HEAT EXCHANGER SCHEDULE												
UNIT TAG	MFGR.	MODEL	HEAT EXCHANGED (MBH)	FLUID TYPE	FLOW RATE (GPM)	FLUID PD (FT H2O)	EWI (°F)	LWT (°F) (BEFORE DRV)	LWT (°F) (AFTER DRV)	FLUID TYPE	PRESSURE (PSI)	FLUID PD (PSI)
HX-1-29	ARMSTRONG	665-DWP-PTW-DMC1-150	3,300	DOMESTIC WATER	50	10	50	140	120	STEAM	7	CONSTANT
HX-2-29	ARMSTRONG	665-DWP-PTW-DMC1-150	3,300	DOMESTIC WATER	50	10	50	140	120	STEAM	7	CONSTANT

NOTES:
1. SEE DETAIL 1/PL501



DOMESTIC WATER ISOMETRIC
SCALE: 1/4" = 1'-0" BUILDING 29 - ROOM 17



BUILDING KEY PLAN

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No.	REVISION	DATE



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Alexandria, MN 56308
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fax 320.759.9062
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JLG 11050M

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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A duly LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SHANE T. JOHNSON, P.E.
DATE: 01-15-2013

DRAWING TITLE:
PLUMBING - FLOOR PLAN, ISOMETRIC & SCHEDULES

APPROVED PROJECT DIRECTOR: _____ DATE: _____

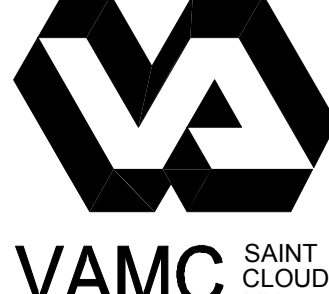
PROJECT TITLE:
HOT WATER GENERATORS

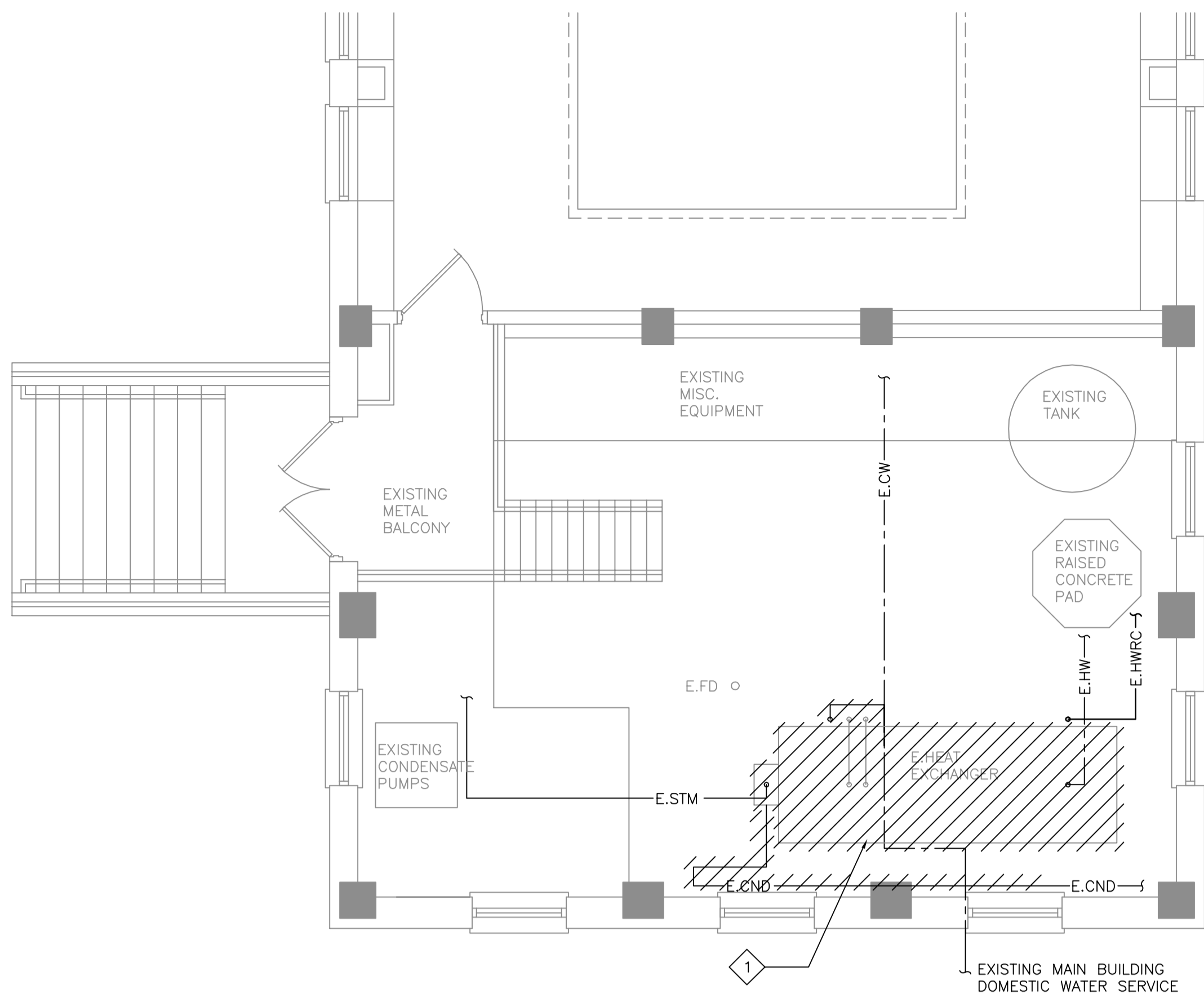
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PROJECT NO.: 656-13-225
SCIP: XXX

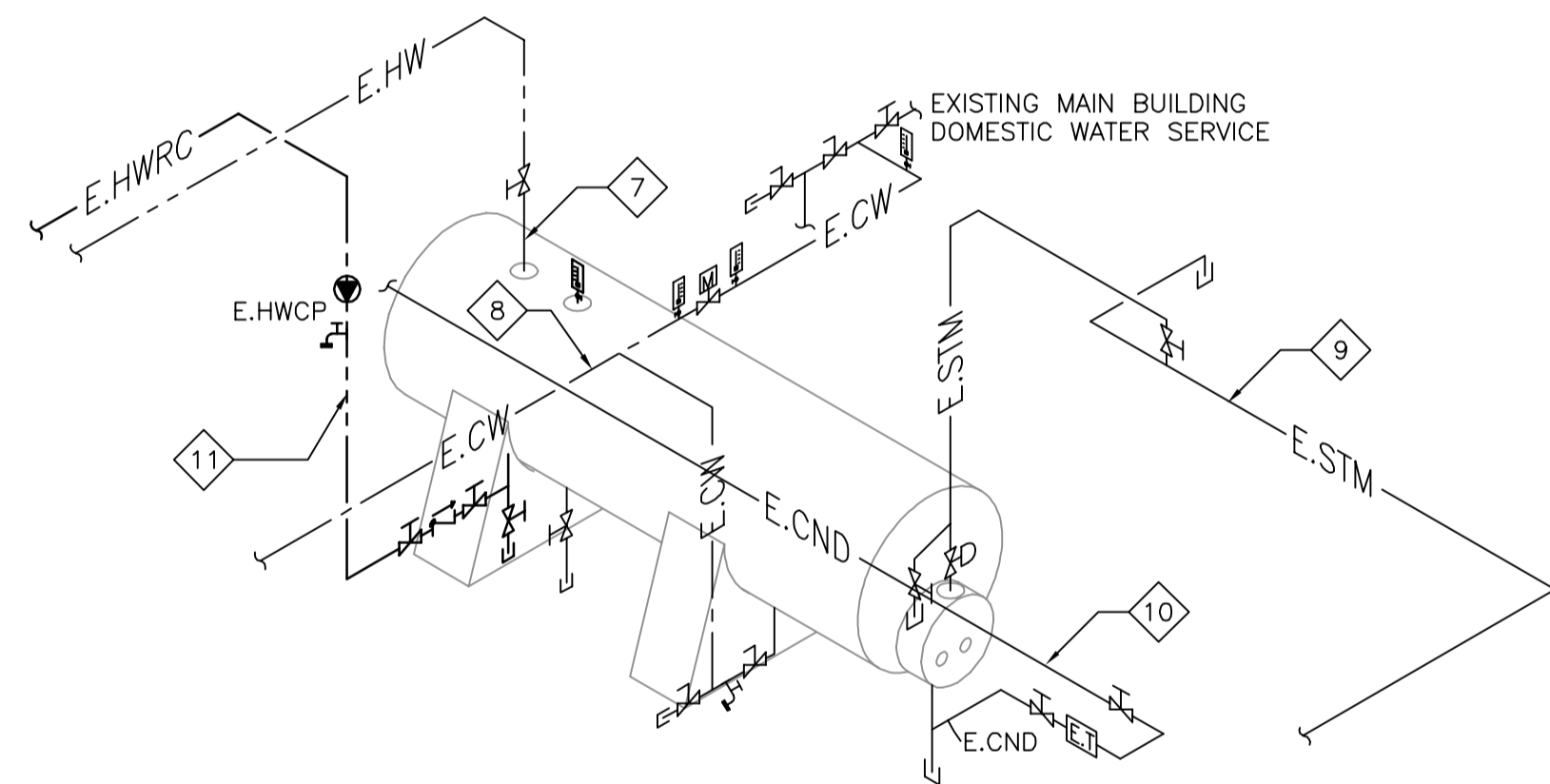
DESIGNED BY: STJ
CHECKED BY: AJF

DRAWING NO.: PL101-29
REV: 1-15-23

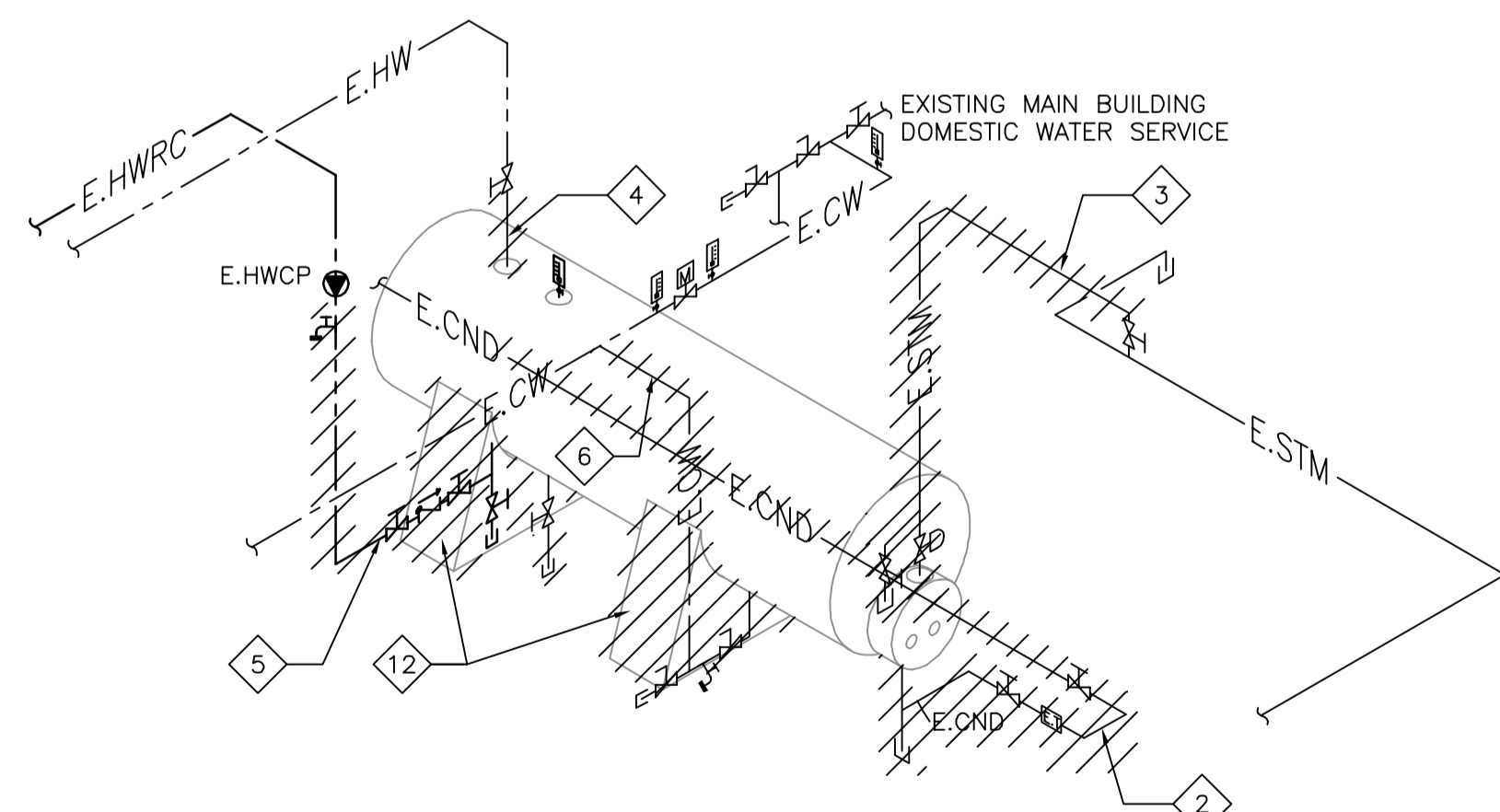




DEMOLITION PLAN
SCALE: 1/4" = 1'-0"
BUILDING 48 - ROOM 3C



DEMOLITION ISOMETRIC - (TEMPORARY)
SCALE: 1/4" = 1'-0"
BUILDING 48 - ROOM 3C



DEMOLITION ISOMETRIC
SCALE: 1/4" = 1'-0"
BUILDING 48 - ROOM 3C



PICTURE 1
NO SCALE
BUILDING 48 - ROOM 3C



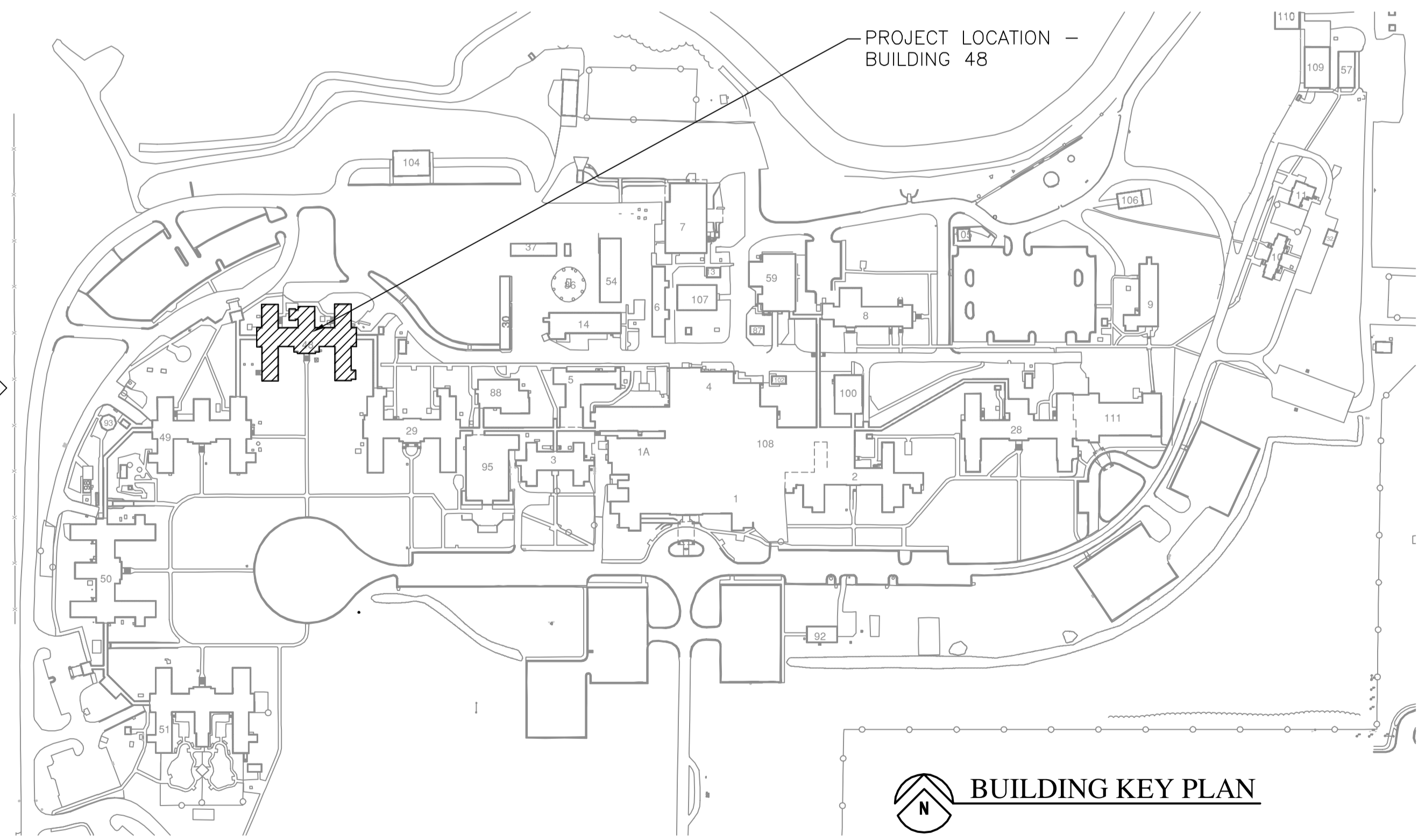
PICTURE 2
NO SCALE
BUILDING 48 - ROOM 3C



PICTURE 3
NO SCALE
BUILDING 48 - ROOM 3C

- ### GENERAL NOTES
1. PLUMBING CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS.
 2. ALL FLOOR AND WALL PENETRATIONS SHALL BE SEALED TO MEET FIRE RATINGS.
 3. ALL HATCHED ITEMS DENOTES DEMOLITION.
 4. SEE SHEET PL-001 FOR SEQUENCE OF CONSTRUCTION.

- ### PLAN NOTES
1. PLUMBING CONTRACTOR SHALL REMOVE EXISTING DOMESTIC HOT WATER TANK, INSULATION, GAUGES, AND ASSOCIATED MATERIALS.
 2. PLUMBING CONTRACTOR SHALL REMOVE EXISTING CONDENSATE PIPE, VALVES, CONDENSATE TRAP, AND ASSOCIATED INSULATION AND HANGERS.
 3. PLUMBING CONTRACTOR SHALL REMOVE EXISTING STEAM PIPE, CONTROL VALVE, AND ASSOCIATED INSULATION AND HANGERS.
 4. PLUMBING CONTRACTOR SHALL REMOVE EXISTING DOMESTIC HOT WATER PIPE AND ASSOCIATED INSULATION AND HANGERS.
 5. PLUMBING CONTRACTOR SHALL REMOVE EXISTING DOMESTIC HOT WATER RECIRC. PIPE, VALVES, AND ASSOCIATED INSULATION AND HANGERS.
 6. PLUMBING CONTRACTOR SHALL REMOVE EXISTING DOMESTIC COLD WATER PIPE, VALVES, AND ASSOCIATED INSULATION AND HANGERS.
 7. TIE-IN POINT FOR DOMESTIC HOT WATER TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE DOMESTIC HOT WATER TO TEMPORARY HEAT EXCHANGER (THX-1). SEE SHEET PL101-48 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 8. TIE-IN POINT FOR DOMESTIC COLD WATER TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE DOMESTIC COLD WATER TO TEMPORARY HEAT EXCHANGER (THX-1) AS REQUIRED. SEE SHEET PL101-48 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 9. TIE-IN POINT FOR LOW PRESSURE STEAM TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE LOW PRESSURE STEAM TO TEMPORARY HEAT EXCHANGER (THX-1) AS REQUIRED. SEE SHEET PL101-48 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 10. TIE-IN POINT FOR CONDENSATE TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE CONDENSATE TO TEMPORARY HEAT EXCHANGER (THX-1) AS REQUIRED. SEE SHEET PL101-48 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 11. TIE-IN POINT FOR HOT WATER RECIRC. TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE HOT WATER RECIRC. TO TEMPORARY HEAT EXCHANGER (THX-1) AS REQUIRED. SEE SHEET PL101-48 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 12. PLUMBING CONTRACTOR SHALL REMOVE EXISTING CONCRETE STANDS. PATCH FLOOR TO MATCH EXISTING FLOOR CONDITIONS.



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I HAVE CERTIFIED THAT THIS PLAN REPRESENTS
THE DESIGN AND CONSTRUCTION OF THE PROJECT
AND THAT I AM A LICENSED PROFESSIONAL ENGINEER UNDER THE
LAWS OF THE STATE OF MINNESOTA.

SHANE T. JOHNSON, P.E.
DATE: 01-15-2013

DRAWING TITLE:
PLUMBING -
DEMOLITION PLANS

APPROVED PROJECT DIRECTOR:
DATE:

PROJECT TITLE:
HOT WATER GENERATORS

DATE:
01.15.2013

PROJECT NO.:
AS NOTED

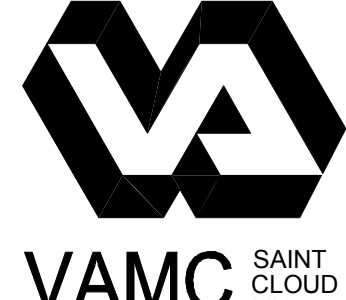
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656-13-225

PROJECT NO.:
SCIP

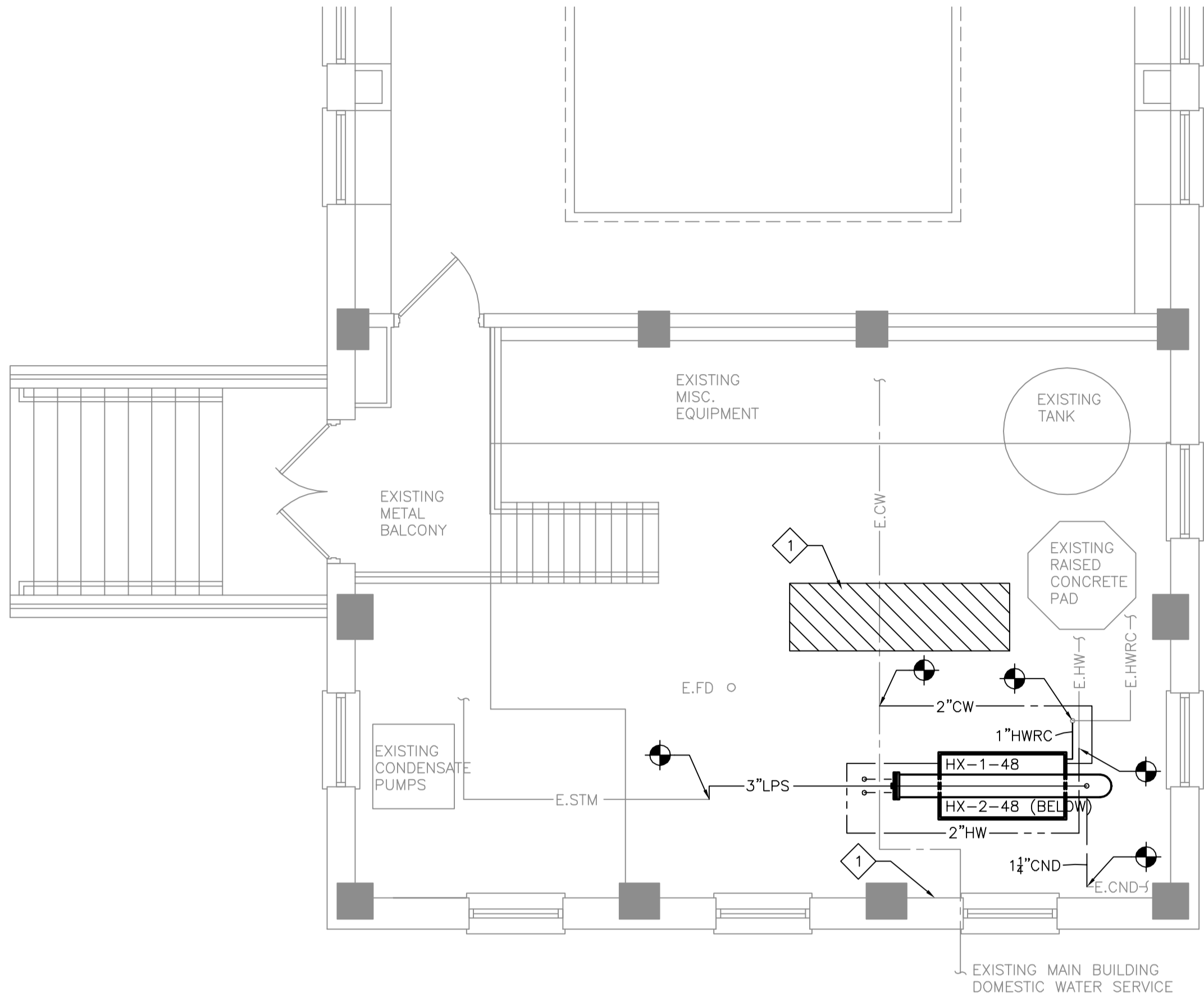
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PROJECT NO.:
PD101-48

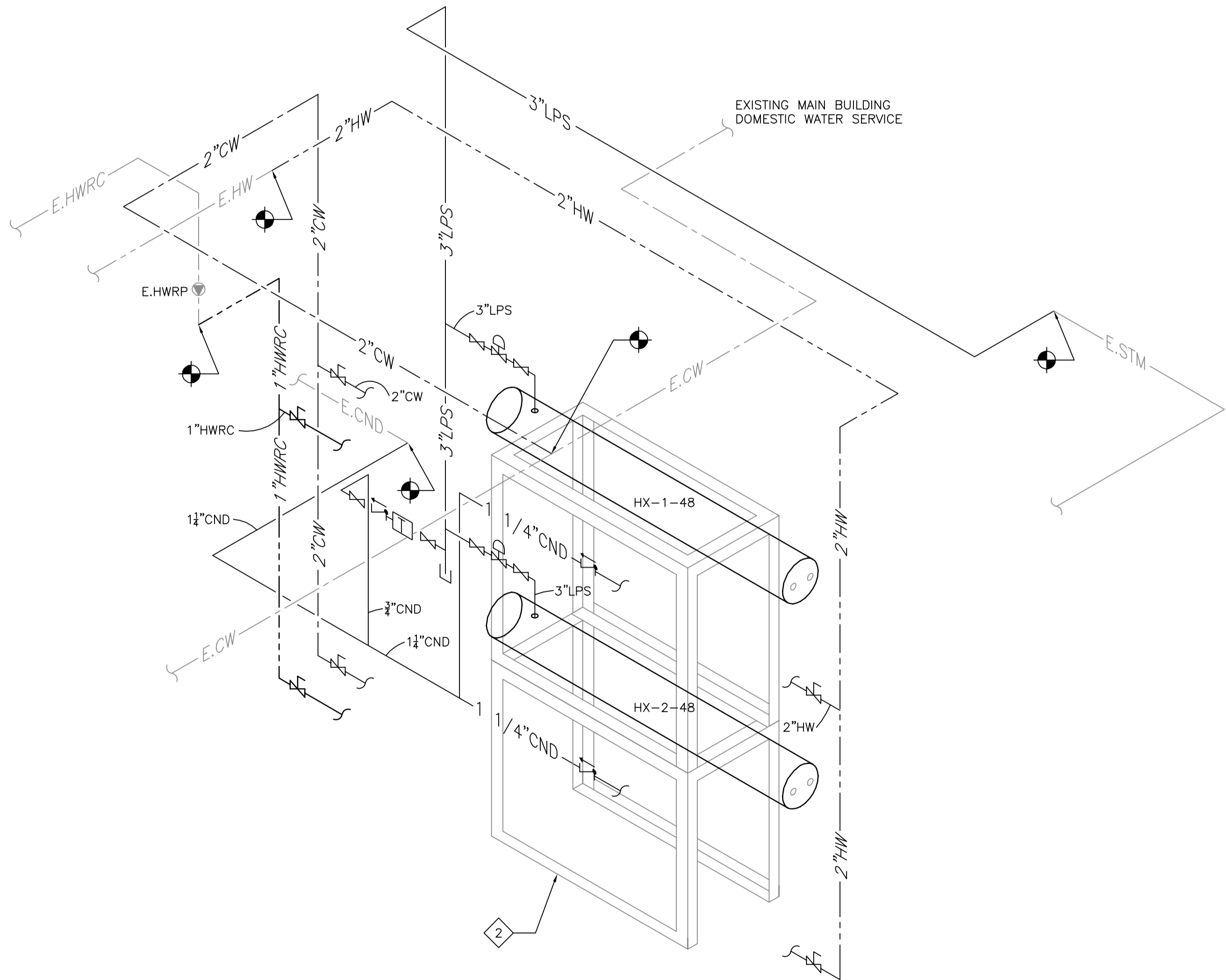
PROJECT NO.:
REV. 15-23



three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarters inch = one foot
one half inch = one foot
three eighths inch = one foot
one quarter inch = one foot
one eighth inch = one foot



PLUMBING FLOOR PLAN
SCALE: 1/4"=1'-0"
BUILDING 48 - ROOM 3C



DOMESTIC WATER ISOMETRIC
SCALE: 1/4"=1'-0"
BUILDING 48 - ROOM 3C

GENERAL NOTES

1. PLUMBING CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS.
2. ALL FLOOR AND WALL PENETRATIONS SHALL BE SEALED TO MEET FIRE RATINGS.
3. SEE SHEET PL-001 FOR SEQUENCE OF CONSTRUCTION.

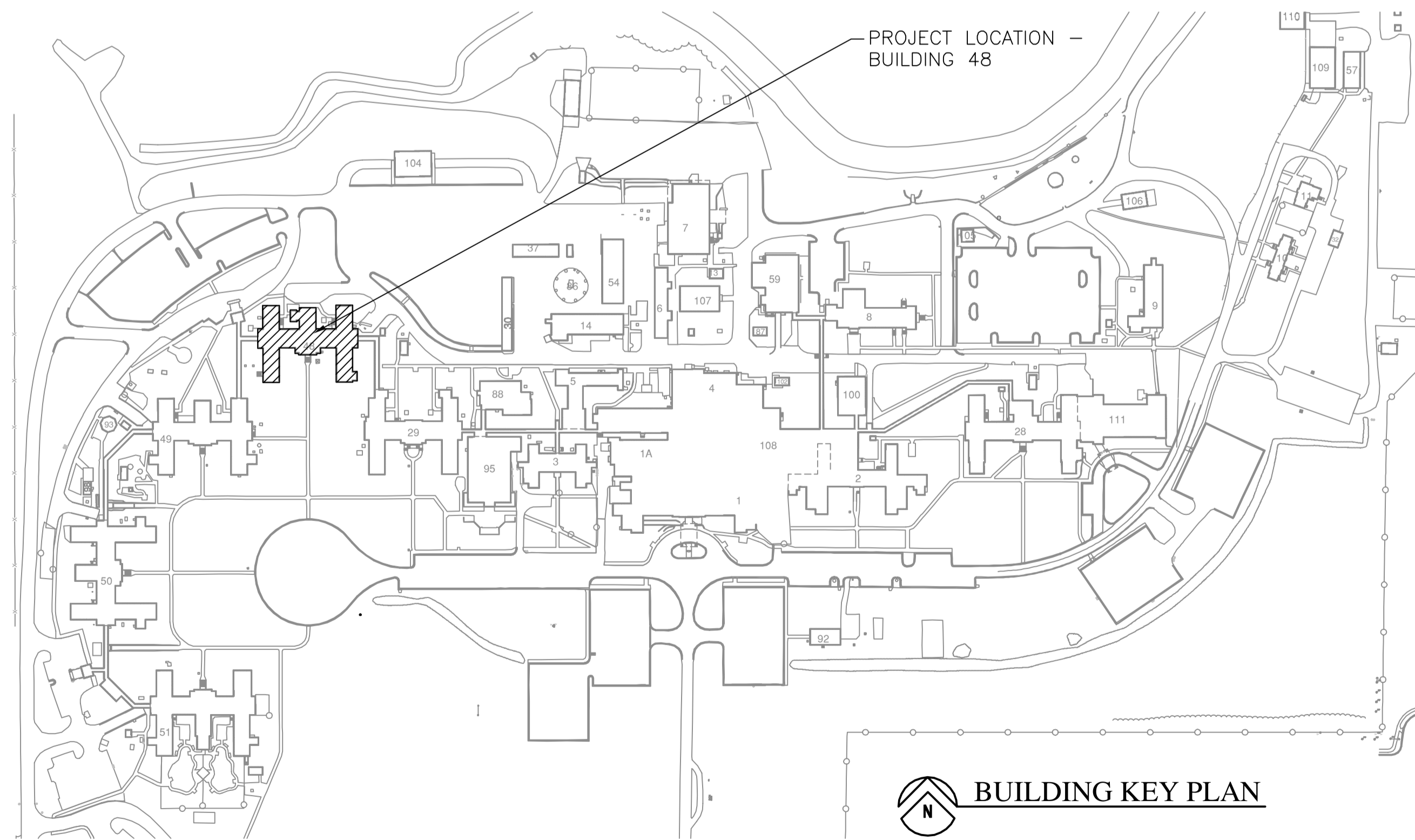
PLAN NOTES

1. TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
2. PLUMBING CONTRACTOR SHALL PROVIDE AND INSTALL PRE-MANUFACTURED HEAT EXCHANGER SKID. SKID SHALL BE PRE-PIPE INCLUDING VALVES, GAUGES AND FITTINGS AS SHOWN ON 1/PL501. CONTRACTOR SHALL PROVIDE HEAT EXCHANGER MANUFACTURER REQUIRED FLOW SWITCHES AND TEMPERATURE GAUGES. HEAT EXCHANGER MANUFACTURER SHALL INSTALL FLOW SWITCHES AND TEMPERATURE GAUGES PRIOR TO SHIPMENT. PLUMBING CONTRACTOR, CONTROLS CONTRACTOR AND MANUFACTURER SHALL COORDINATE.
3. PLUMBING CONTRACTOR SHALL HIRE A LICENSED ELECTRICAL CONTRACTOR TO PROVIDE 120V POWER TO THE DIGITAL MIXING VALVE, TYPICAL TWO PER SKID. SEE 1/PL501 FOR LOCATION OF MIXING VALVES ON SKID. MIXING VALVES SHALL BE WIRED BACK TO A SPARE 20 AMP BREAKER ON A EXISTING EMERGENCY ELECTRICAL PANEL. PANEL LOCATED IN SERVICE ROOM 3C. EXACT PANEL LOCATION SHALL BE VERIFIED DURING PRE-BID WALK-THRU. PROVIDE NEW TYPED PANEL DIRECTORY IN EXISTING PANEL AFTER WORK IS COMPLETE. NO SPLICING ALLOWED.

HEAT EXCHANGER SCHEDULE

UNIT TAG	MFGR.	MODEL	HEAT EXCHANGED (MBH)	FLUID TYPE	FLOW RATE (GPM)	FLUID PD (FT H2O)	EWI (°F)	LWT (°F) (BEFORE DRV)	LWT (°F) (AFTER DRV)	FLUID TYPE	PRESSURE (PSI)	FLUID PD (PSI)
HX-1-48	ARMSTRONG	665-DWP-PTW-DMC1-150	3,300	DOMESTIC WATER	50	10	50	140	120	STEAM	7	CONSTANT
HX-2-48	ARMSTRONG	665-DWP-PTW-DMC1-150	3,300	DOMESTIC WATER	50	10	50	140	120	STEAM	7	CONSTANT

NOTES:
1. SEE DETAIL 1/PL501



BUILDING KEY PLAN

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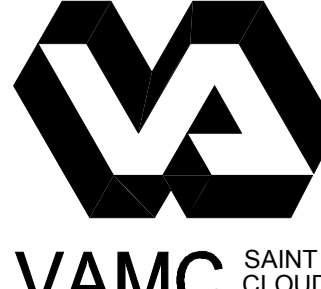
STAMPED:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
SHAUN T. JOHNSON, P.E. MN 4808
DATE: 01-15-2013 REG. NO.

DRAWING TITLE:
PLUMBING - FLOOR PLAN, ISOMETRIC & SCHEDULES

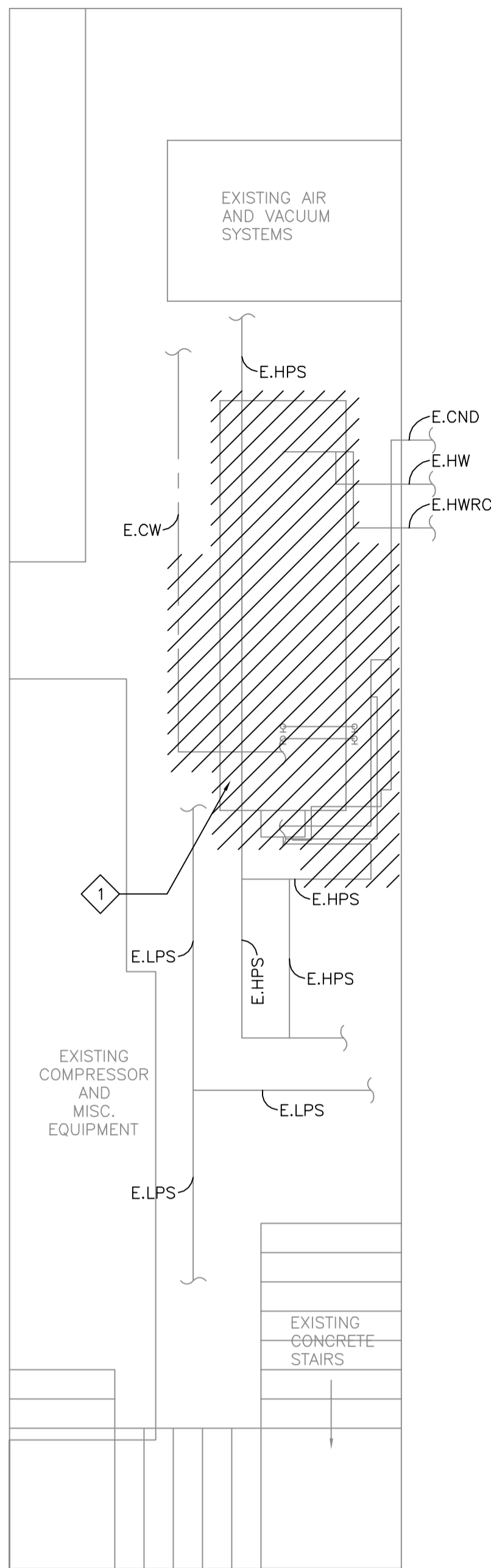
APPROVED PROJECT DIRECTOR: _____ DATE: _____

PROJECT TITLE:
HOT WATER GENERATORS

DATE: 01.15.2013
PROJECT SCALE: AS NOTED
PROJECT NO: 656-13-225
SCIP: XXX
BUILDING NO: AS NOTED
DESIGNED BY: STJ
DRAWN BY: AJF
LOCATION: ST. CLOUD VA MEDICAL CENTER
ST. CLOUD, MN 56303
DRAWING NO: PL101-48
SHEET: 23



three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarters inch = one foot
one half inch = one foot
three eighths inch = one foot
one quarter inch = one foot
one eighth inch = one foot



DEMOLITION PLAN
NO SCALE BUILDING 50 - ROOM 8



PICTURE 1
NO SCALE BUILDING 50 - ROOM 8



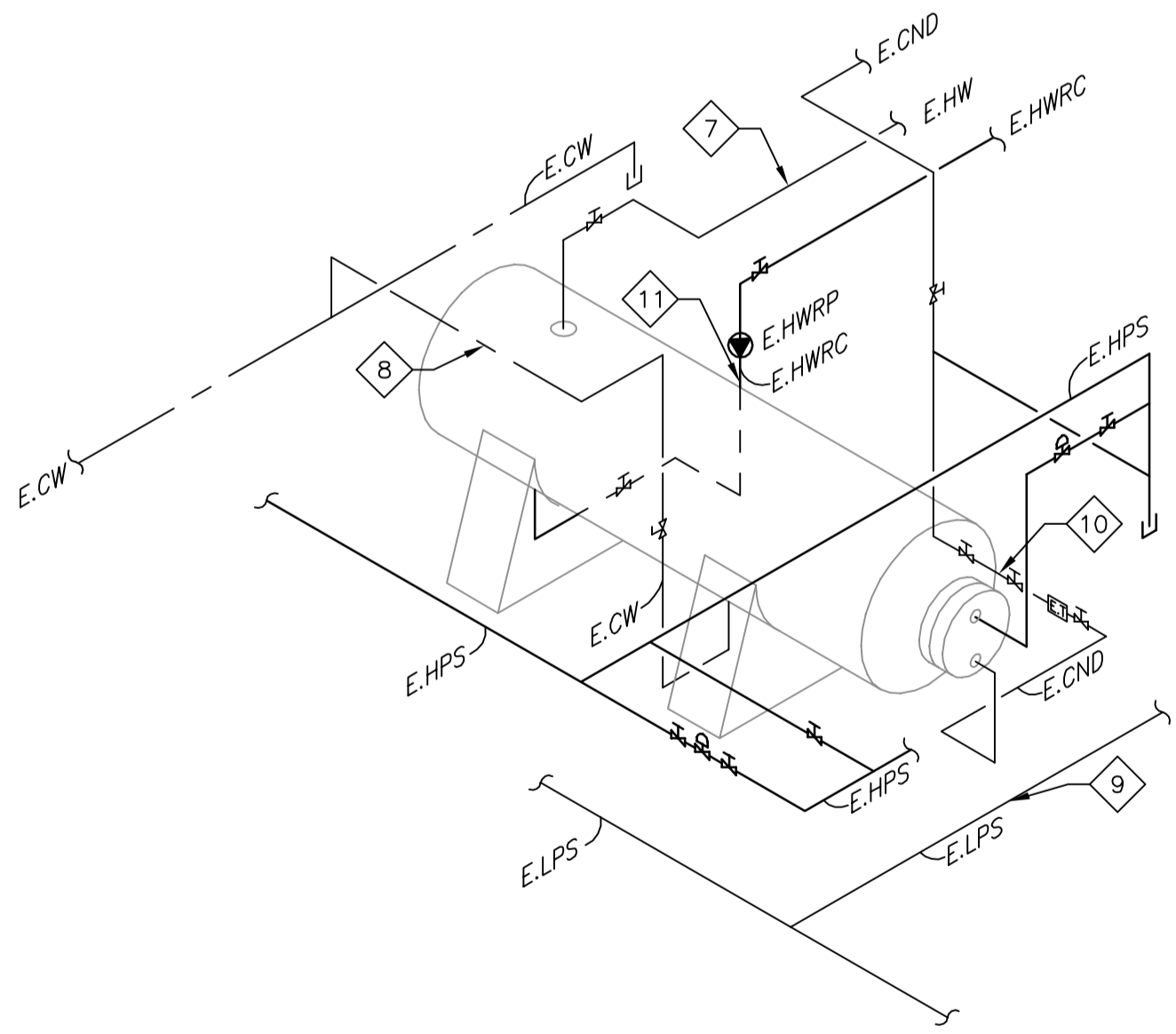
PICTURE 2
NO SCALE BUILDING 50 - ROOM 8



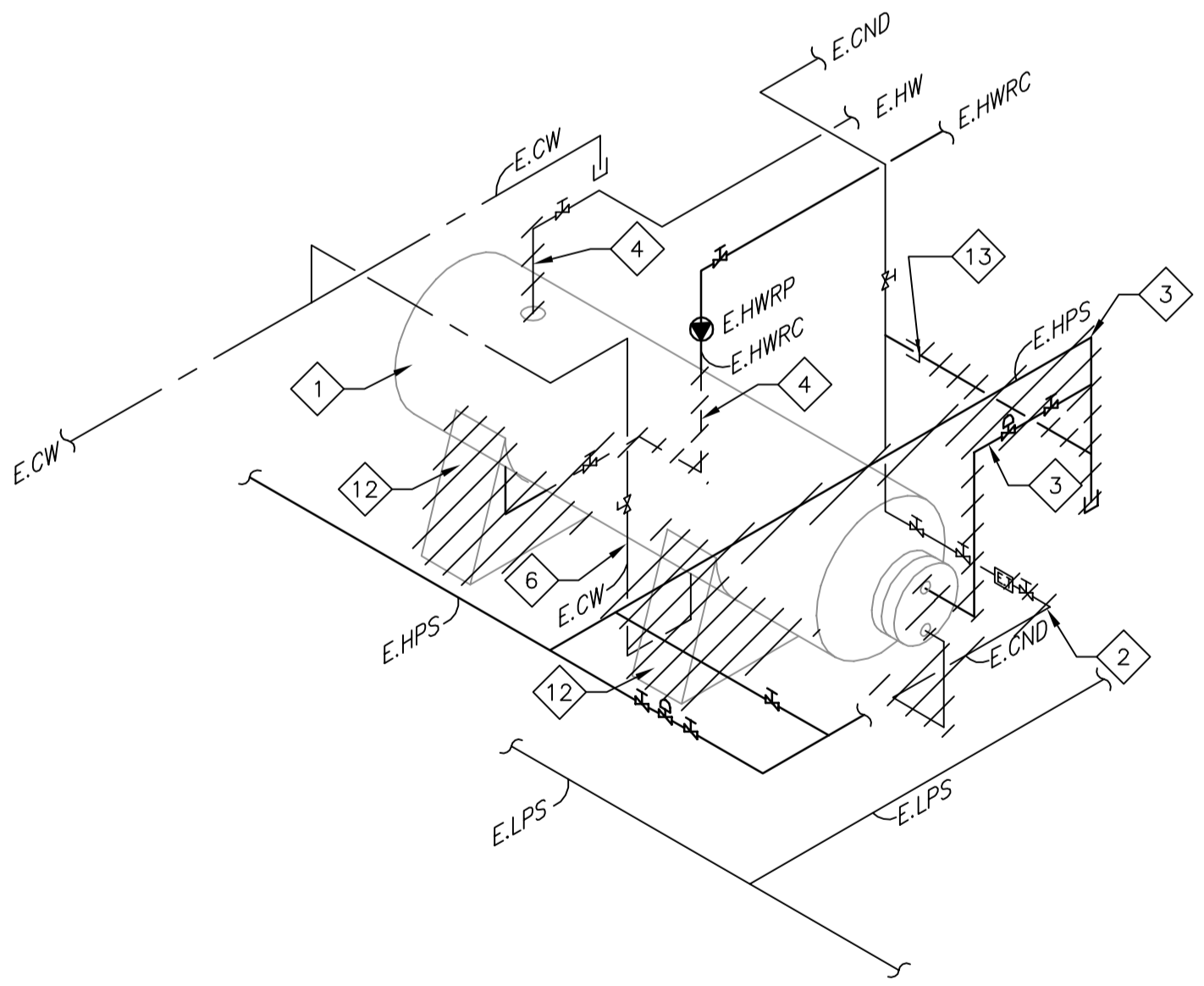
PICTURE 3
NO SCALE BUILDING 50 - ROOM 8

- GENERAL NOTES**
1. PLUMBING CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS.
 2. ALL FLOOR AND WALL PENETRATIONS SHALL BE SEALED TO MEET FIRE RATINGS.
 3. ALL HATCHED ITEMS DENOTES DEMOLITION.
 4. SEE SHEET PL-001 FOR SEQUENCE OF CONSTRUCTION.

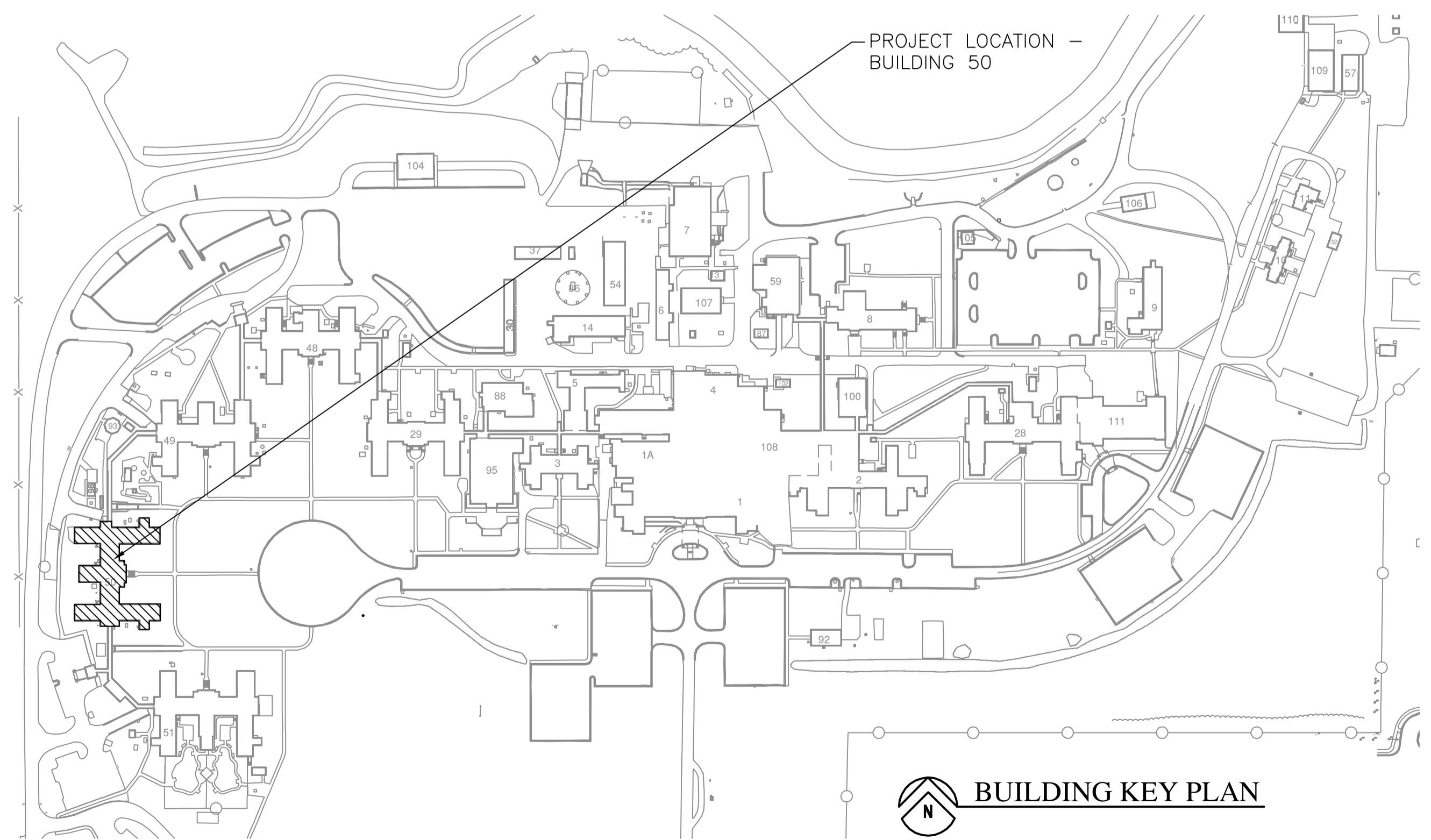
- PLAN NOTES**
1. PLUMBING CONTRACTOR SHALL REMOVE EXISTING DOMESTIC HOT WATER TANK, INSULATION, GAUGES, AND ASSOCIATED MATERIALS.
 2. PLUMBING CONTRACTOR SHALL REMOVE EXISTING CONDENSATE PIPE, VALVES, CONDENSATE TRAP, AND ASSOCIATED INSULATION AND HANGERS.
 3. PLUMBING CONTRACTOR SHALL REMOVE EXISTING STEAM PIPE, CONTROL VALVE, AND ASSOCIATED INSULATION AND HANGERS. PLUMBING CONTRACTOR SHALL CAP STEAM PIPE AT MAIN.
 4. PLUMBING CONTRACTOR SHALL REMOVE EXISTING DOMESTIC HOT WATER PIPE, VALVES, AND ASSOCIATED INSULATION AND HANGERS.
 5. PLUMBING CONTRACTOR SHALL REMOVE EXISTING DOMESTIC HOT WATER RECIRC. PIPE, VALVES, AND ASSOCIATED INSULATION AND HANGERS.
 6. PLUMBING CONTRACTOR SHALL REMOVE EXISTING DOMESTIC COLD WATER PIPE, VALVES, AND ASSOCIATED INSULATION AND HANGERS.
 7. TIE-IN POINT FOR DOMESTIC HOT WATER TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE DOMESTIC HOT WATER TO TEMPORARY HEAT EXCHANGER (THX-1). SEE SHEET PL101-50 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 8. TIE-IN POINT FOR DOMESTIC COLD WATER TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE DOMESTIC COLD WATER TO TEMPORARY HEAT EXCHANGER (THX-1) AS REQUIRED. SEE SHEET PL101-50 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 9. TIE-IN POINT FOR LOW PRESSURE STEAM TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE LOW PRESSURE STEAM TO TEMPORARY HEAT EXCHANGER (THX-1) AS REQUIRED. SEE SHEET PL101-50 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 10. TIE-IN POINT FOR CONDENSATE TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE CONDENSATE TO TEMPORARY HEAT EXCHANGER AS REQUIRED FOR TEMPORARY HEAT EXCHANGER (THX-1). SEE SHEET PL101-50 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 11. TIE-IN POINT FOR HOT WATER RECIRC TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE HOT WATER RECIRC TO TEMPORARY HEAT EXCHANGER (THX-1) AS REQUIRED. SEE SHEET PL101-50 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 12. PLUMBING CONTRACTOR SHALL REMOVE EXISTING CONCRETE STAND. PATCH FLOOR TO MATCH FLOOR CONDITIONS.
 13. PLUMBING CONTRACTOR SHALL CAP EXISTING CONDENSATE.



DEMOLITION ISOMETRIC PLAN (TEMPORARY)
NO SCALE BUILDING 50 - ROOM 8



DEMOLITION ISOMETRIC PLAN
NO SCALE BUILDING 50 - ROOM 8



BUILDING KEY PLAN

100% Construction Documents - For Construction

No	REVISION	DATE

VA FORM 05-6231



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Alexandria, MN 56308
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5389 West St. Germain, Suite 250
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525 Broadway Street
Alexandria, MN 56308
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fax 507.759.9062
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JLG 11050M

STAMPED:
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A duly LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SHANE T. JOHNSON, P.E.
DATE: 01-15-2013

DRAWING TITLE:
PLUMBING - DEMOLITION PLANS

APPROVED PROJECT DIRECTOR: _____ DATE: _____

PROJECT TITLE:
HOT WATER GENERATORS

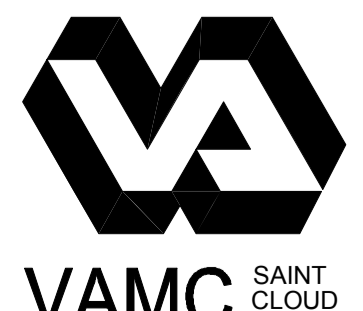
DATE: 01.15.2013

NOT SCALE
AS NOTED
PROJECT NO: 656-13-225
SCIP: XXXX

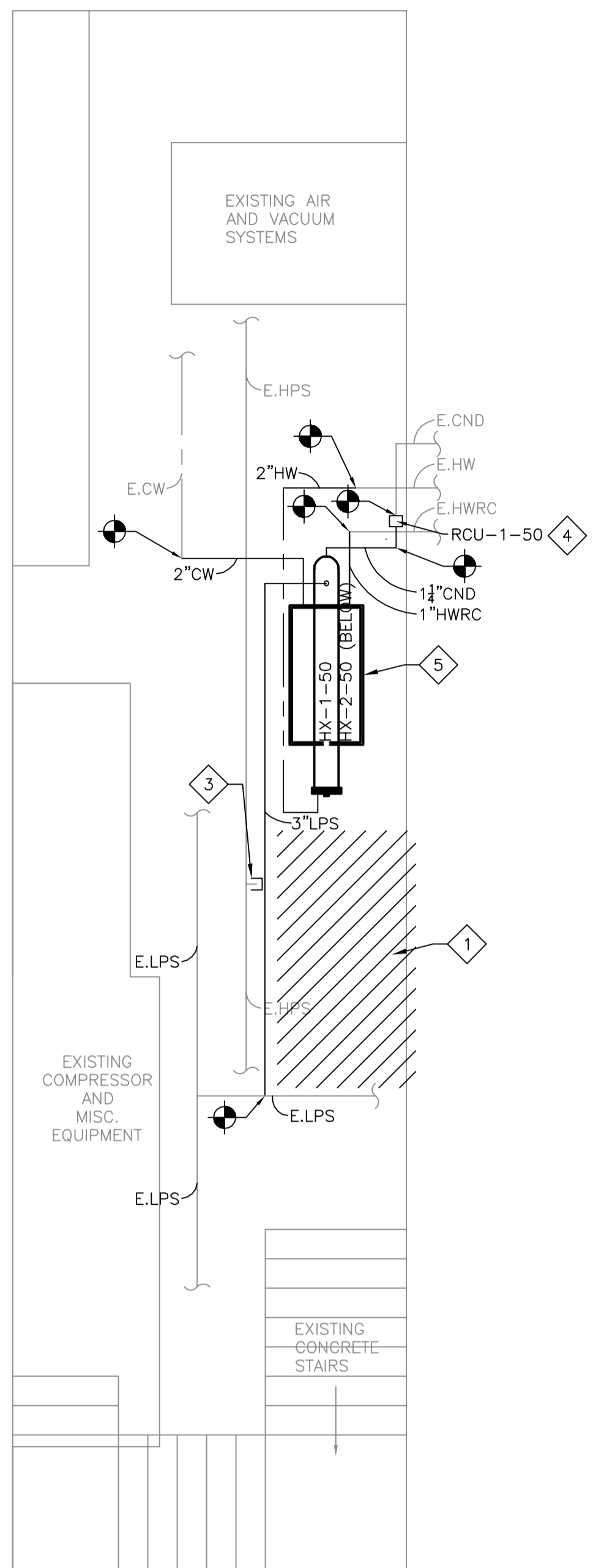
BUILDING NO: AS NOTED
DESIGNED BY: STJ
DRAWN BY: AJF

LOCATION:
ST. CLOUD VA MEDICAL CENTER
ST. CLOUD, MN 56303

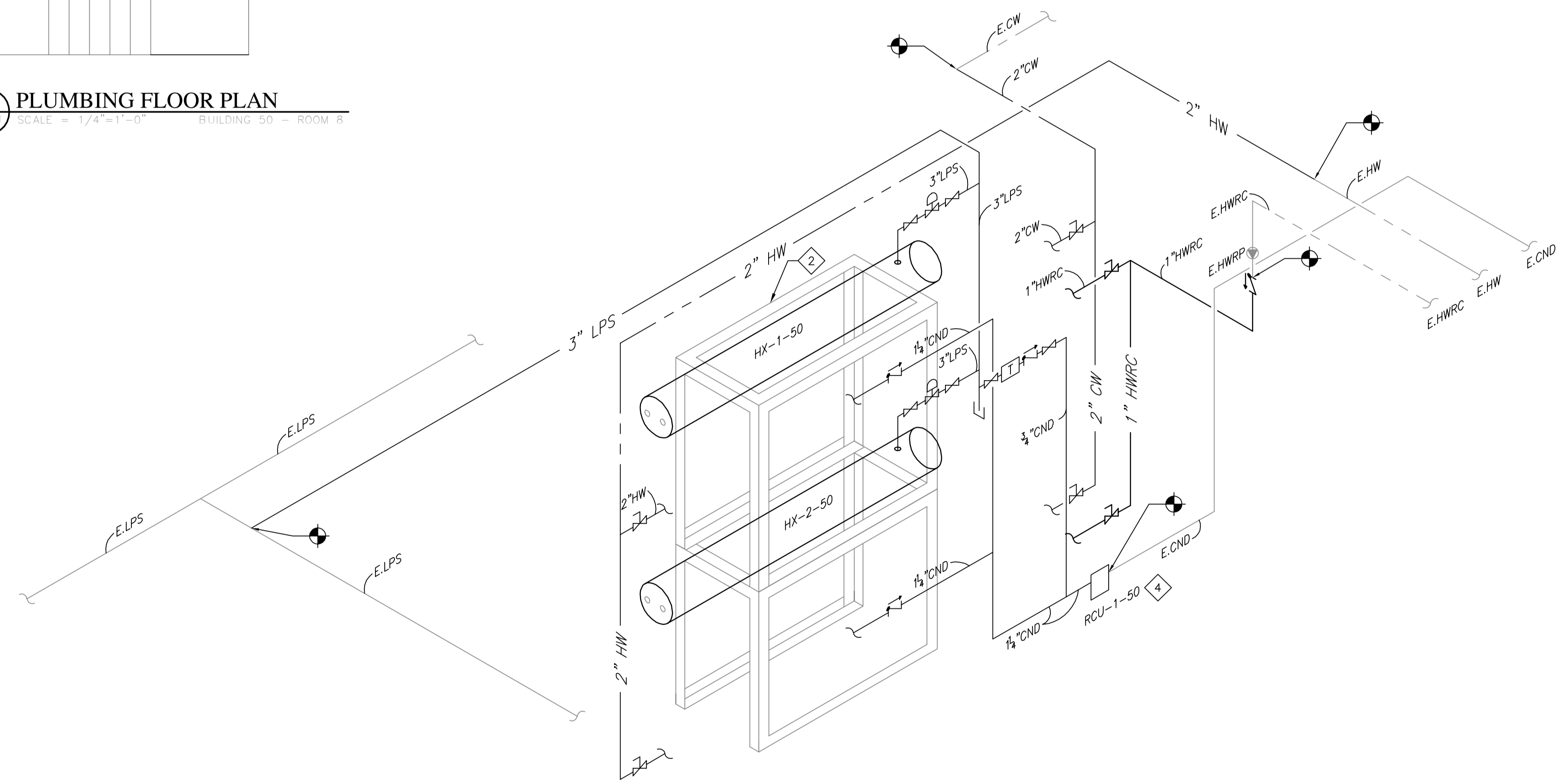
DRAWING NO: PD101-50
REV: 15-23



three inches = one foot
one and one half inches = one foot
one inch = one foot
one half inch = one foot
three quarters inch = one foot
three eighths inch = one foot
one quarter inch = one foot
one eighth inch = one foot



PLUMBING FLOOR PLAN
SCALE = 1/4"=1'-0"
BUILDING 50 - ROOM 8



DOMESTIC WATER ISOMETRIC
SCALE = 1/4"=1'-0"
BUILDING 50

- GENERAL NOTES**
1. PLUMBING CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS.
 2. ALL FLOOR AND WALL PENETRATIONS SHALL BE SEALED TO MEET FIRE RATINGS.
 3. SEE SHEET PL-001 FOR SEQUENCE OF CONSTRUCTION.

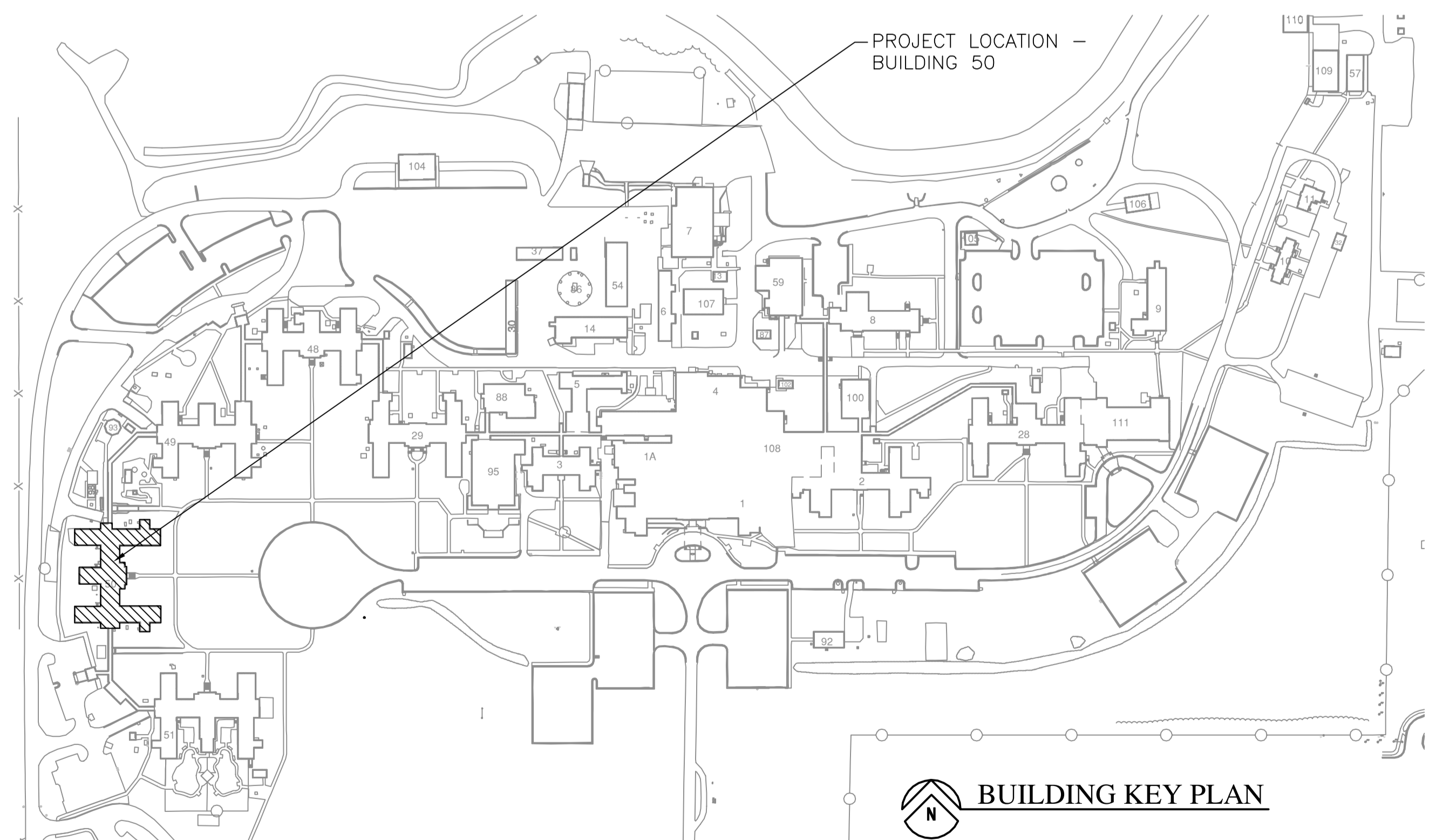
- PLAN NOTES**
1. TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 2. PLUMBING CONTRACTOR SHALL PROVIDE AND INSTALL PRE-MANUFACTURED HEAT EXCHANGER SKID. SKID SHALL BE PRE-PIPE INCLUDING VALVES, GAUGES AND FITTINGS AS SHOWN ON 1/PL501. CONTROLS CONTRACTOR SHALL PROVIDE HEAT EXCHANGER MANUFACTURER REQUIRED FLOW SWITCHES AND TEMPERATURE GAUGES. HEAT EXCHANGER MANUFACTURER SHALL INSTALL FLOW SWITCHES AND TEMPERATURE GAUGES PRIOR TO SHIPMENT. PLUMBING CONTRACTOR, CONTROLS CONTRACTOR AND MANUFACTURER SHALL COORDINATE.
 3. CAP EXISTING STEAM PIPE.
 4. PLUMBING CONTRACTOR SHALL HIRE A LICENSED ELECTRICAL CONTRACTOR TO WIRE CONDENSATE PUMP. ELECTRICAL CONTRACTOR SHALL WIRE PUMP BACK TO NEAREST EXISTING ELECTRICAL PANEL WITH SPARE CAPACITY AND PROVIDE A 20 AMP BREAKER. NO SPLICING ALLOWED. PROVIDE A NEW TYPED PANEL DIRECTORY IN EXISTING PANEL AFTER WORK IS COMPLETE.
 5. PLUMBING CONTRACTOR SHALL HIRE A LICENSED ELECTRICAL CONTRACTOR TO PROVIDE 120V POWER TO THE DIGITAL MIXING VALVE, TYPICAL TWO PER SKID. SEE 1/PL501 FOR LOCATION OF MIXING VALVES ON SKID. MIXING VALVES SHALL BE WIRED BACK TO A SPARE 20 AMP BREAKER ON A EXISTING EMERGENCY ELECTRICAL PANEL. PANEL LOCATED IN MECHANICAL ROOM 21, EXACT PANEL LOCATION SHALL BE VERIFIED DURING PRE-BID WALK-THRU. PROVIDE NEW TYPED PANEL DIRECTORY IN EXISTING PANEL AFTER WORK IS COMPLETE. NO SPLICING ALLOWED.

HEAT EXCHANGER SCHEDULE												
UNIT TAG	MFGR.	MODEL	HEAT EXCHANGED (MBH)	FLUID TYPE	FLOW RATE (GPM)	FLUID PD (FT H2O)	EWI (°F)	LWT (°F) (BEFORE DRV)	LWT (°F) (AFTER DRV)	FLUID TYPE	PRESSURE (PSI)	FLUID PD (PSI)
HX-1-50	ARMSTRONG	665-DWP-PTW-DMC1-150	3,300	DOMESTIC WATER	50	10	50	140	120	STEAM	7	CONSTANT
HX-2-50	ARMSTRONG	665-DWP-PTW-DMC1-150	3,300	DOMESTIC WATER	50	10	50	140	120	STEAM	7	CONSTANT

NOTES:
1. SEE DETAIL 1/PL501

RECEIVER CONDENSATE UNIT SCHEDULE								
UNIT TAG	MFGR.	MODEL	NUMBER OF PUMPS	DISCHARGE PRESSURE PSIG	PUMP CAPACITY GPM	RECEIVER CAPACITY GALLONS	MOTOR HP	VOLTS
RCU-1-50	HOFFMAN PUMP	WCD12-20B-MA	DUPLEX	20	18	14	1/3	120

NOTES:
1. PROVIDE CAST IRON RECEIVER, TWO PUMP AND MOTOR ASSEMBLIES, DOUBLE POLE MECHANICAL ALTERNATOR.



BUILDING KEY PLAN

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No.	REVISION	DATE

Design Tree
ENGINEERING AND LAND SURVEYING

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fax 320.759.9062
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STAMP SEAL
I HEREBY CERTIFY THAT THIS PLUMBING DOCUMENT OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A duly LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SHANE T. JOHNSON, P.E.
DATE: 01-15-2013
MIN. 48008
REG. NO.

DRAWING TITLE
PLUMBING - FLOOR PLAN, ISOMETRIC & SCHEDULES

APPROVED PROJECT DIRECTOR
DATE:

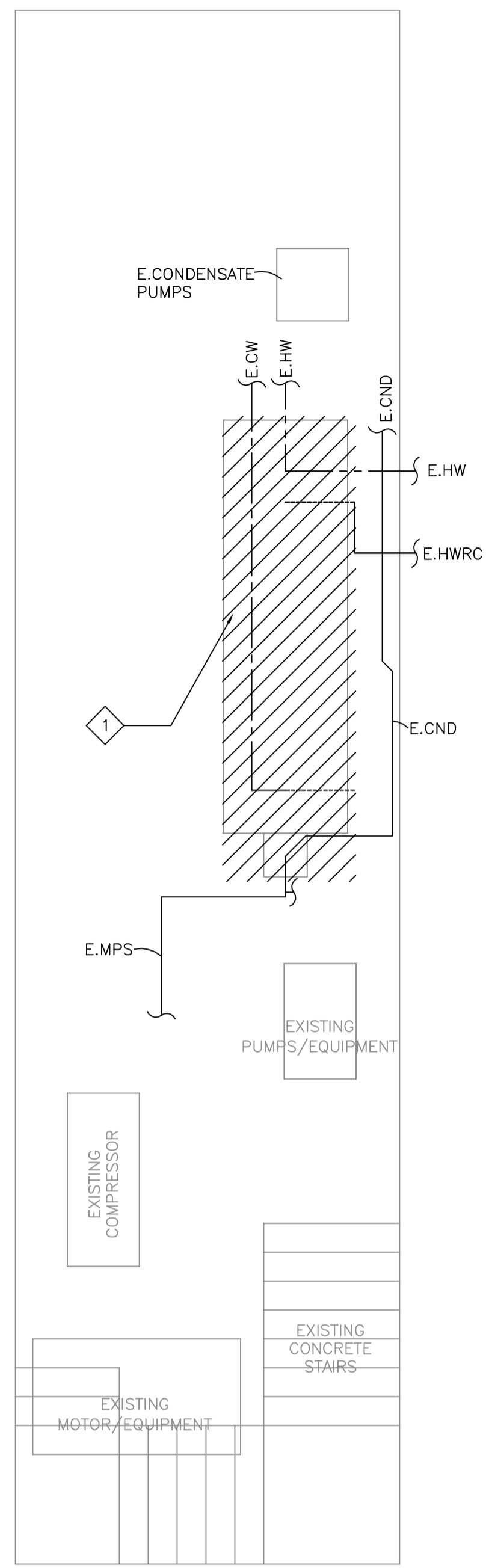
PROJECT TITLE
HOT WATER GENERATORS

DATE: 01.15.2013

PROJECT NO.	AS NOTED
PROJECT NO.	656-13-225
PROJECT NO.	SCIP
PROJECT NO.	XXX

DRAWING NO.
PL101-50
REV. 10/23

VAMC
SAINT CLOUD, MN



DEMOLITION PLAN
SCALE = 1/4" = 1'-0"
BUILDING 51-ROOM 10



PICTURE #1
NO SCALE
BUILDING 51-ROOM 10



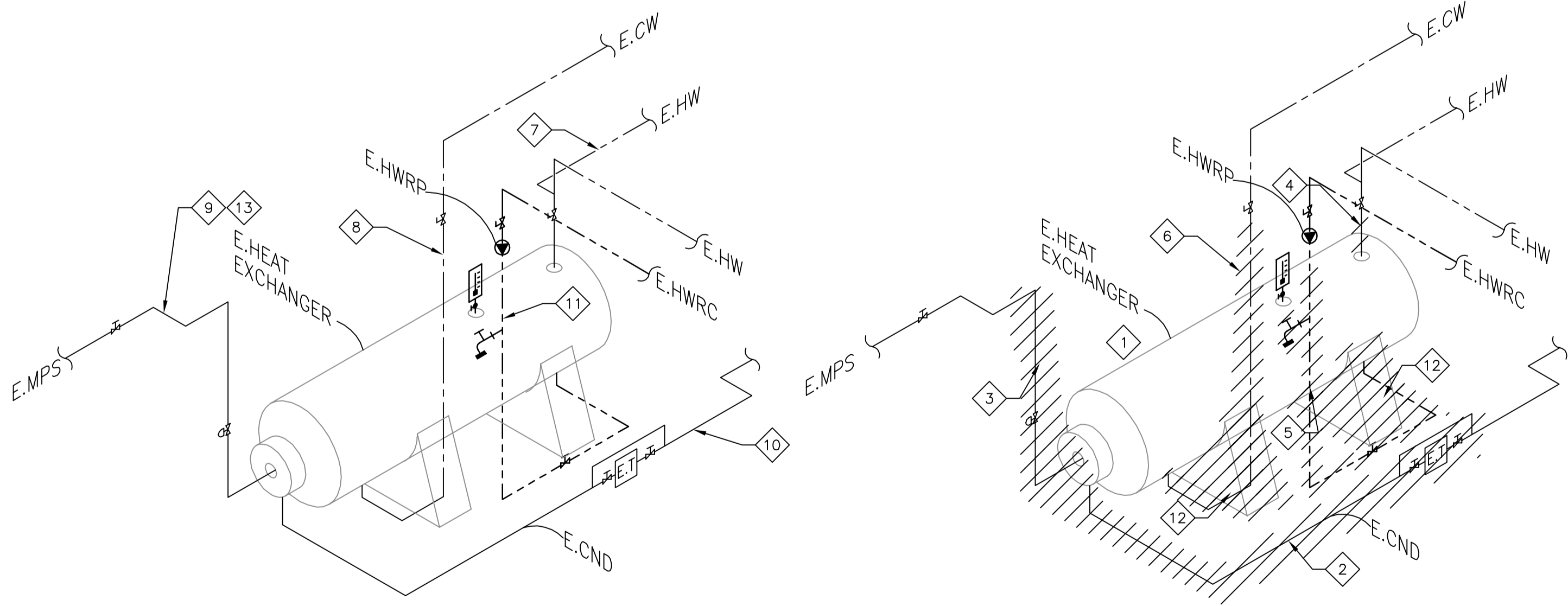
PICTURE #2
NO SCALE
BUILDING 51-ROOM 10



PICTURE #3
NO SCALE
BUILDING 51-ROOM 10

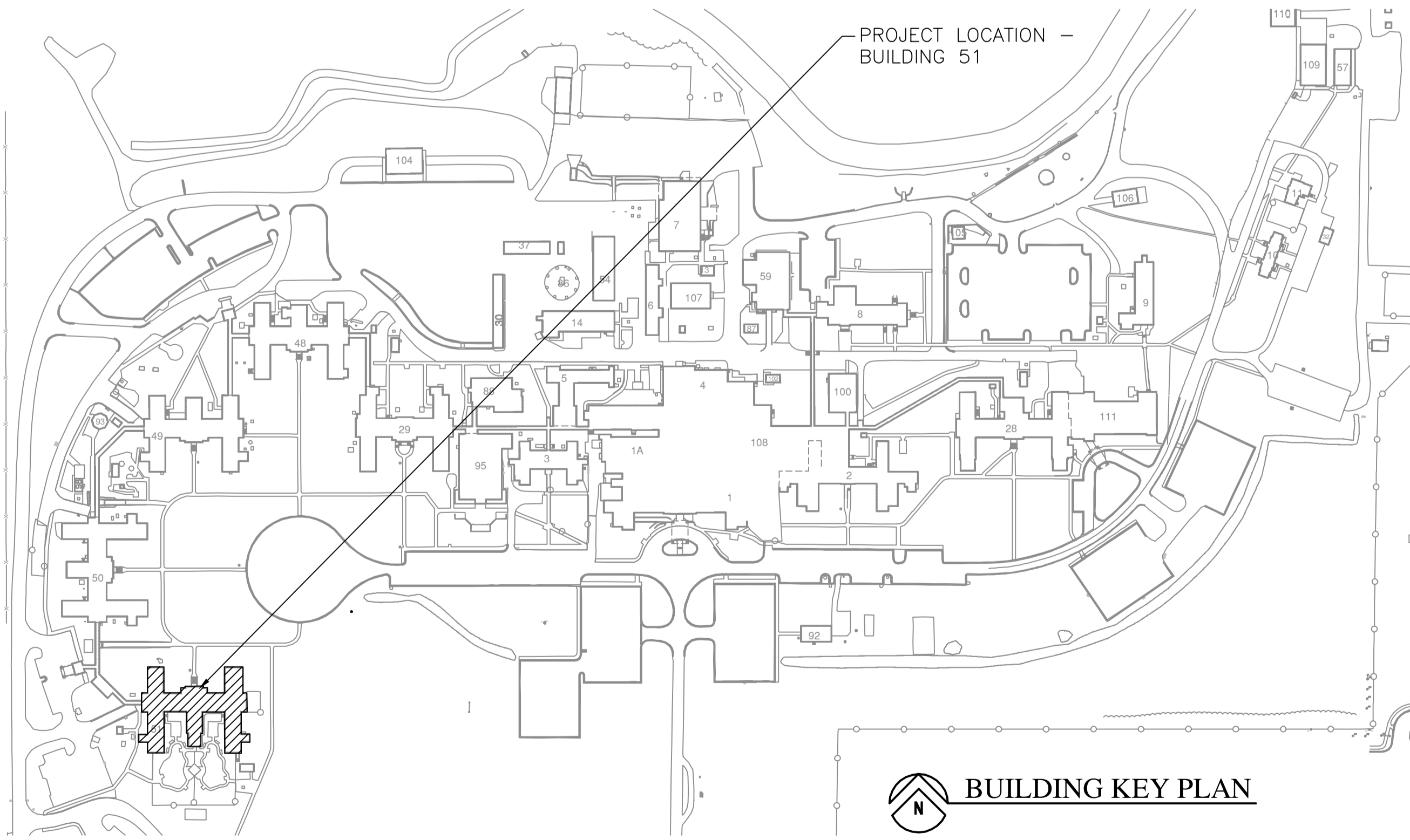
- ### PLAN NOTES
- 1 PLUMBING CONTRACTOR SHALL REMOVE EXISTING DOMESTIC HOT WATER TANK, INSULATION, GAUGES, AND ASSOCIATED MATERIALS.
 - 2 PLUMBING CONTRACTOR SHALL REMOVE EXISTING CONDENSATE PIPE, VALVES, CONDENSATE TRAP, AND ASSOCIATED INSULATING AND HANGERS.
 - 3 PLUMBING CONTRACTOR SHALL REMOVE EXISTING STEAM PIPE, CONTROL VALVE, AND ASSOCIATED INSULATION AND HANGERS.
 - 4 PLUMBING CONTRACTOR SHALL REMOVE EXISTING DOMESTIC HOT WATER PIPE AND ASSOCIATED INSULATION AND HANGERS.
 - 5 PLUMBING CONTRACTOR SHALL REMOVE EXISTING DOMESTIC HOT WATER RECIRC. PIPE, VALVES, AND ASSOCIATED INSULATION AND HANGERS.
 - 6 PLUMBING CONTRACTOR SHALL REMOVE EXISTING DOMESTIC COLD WATER PIPE, VALVES, AND ASSOCIATED INSULATION AND HANGERS.
 - 7 TIE-IN POINT FOR DOMESTIC HOT WATER TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE DOMESTIC HOT WATER TO TEMPORARY HEAT EXCHANGER (THX-1). SEE SHEET PL101-51 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 - 8 TIE-IN POINT FOR DOMESTIC COLD WATER TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE DOMESTIC COLD WATER TO TEMPORARY HEAT EXCHANGER (THX-1) AS REQUIRED. SEE SHEET PL101-51 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 - 9 TIE-IN POINT FOR LOW PRESSURE STEAM TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE LOW PRESSURE STEAM TO TEMPORARY HEAT EXCHANGER (THX-1) AS REQUIRED. SEE SHEET PL101-51 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 - 10 TIE-IN POINT FOR CONDENSATE TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE CONDENSATE TO TEMPORARY HEAT EXCHANGER (THX-1) AS REQUIRED. SEE SHEET PL101-51 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 - 11 TIE-IN POINT FOR HOT WATER RECIRC. TO TEMPORARY HEAT EXCHANGER (THX-1). PLUMBING CONTRACTOR SHALL PIPE HOT WATER RECIRC. TO TEMPORARY HEAT EXCHANGER (THX-1) AS REQUIRED. SEE SHEET PL-101-51 FOR TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
 - 12 PLUMBING CONTRACTOR SHALL REMOVE EXISTING CONCRETE STAND. PATCH FLOOR TO MATCH EXISTING FLOOR CONDITIONS.
 - 13 PLUMBING CONTRACTOR SHALL INSTALL PRESSURE REDUCING STATION (30PSI-7PSI) WHEN INSTALLING STEAM TIE-IN FOR TEMPORARY HEAT EXCHANGER. SEE PL-101-51 FOR LOCATION AND PRESSURE.

- ### GENERAL NOTES
1. PLUMBING CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS.
 2. ALL FLOOR AND WALL PENETRATIONS SHALL BE SEALED TO MEET FIRE RATINGS.
 3. ALL HATCHED ITEMS DENOTES RELOCATION OR DEMOLITION.
 4. SEE SHEET PL-001 FOR SEQUENCE OF CONSTRUCTION.
 5. PLUMBING CONTRACTOR SHALL COORDINATE INSTALLATION OF TEMPORARY HEAT EXCHANGER (THX-1), RELOCATION OF HYDRONIC PUMPS AS SHOWN ON PL102, DEMOLITION OF EXISTING HEAT EXCHANGER AND INSTALLATION OF NEW HEAT EXCHANGERS HX-1-51 AND HX-2-51.



DEMOLITION ISOMETRIC - (TEMPORARY)
NO SCALE
BUILDING 51-ROOM 10

DEMOLITION ISOMETRIC
NO SCALE
BUILDING 51-ROOM 10



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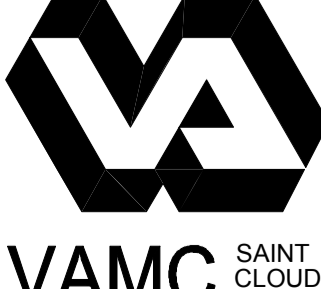
STAMP SEAL
I AMBERY CERTIFY THAT THIS PLAN SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE: 01-15-2013
SIGNATURE: SHANE T. JOHNSON, P.E.
REG. NO. MN 48808

DRAWING TITLE
PLUMBING - DEMOLITION PLANS

APPROVED PROJECT DIRECTOR
DATE:

HOT WATER GENERATORS			DATE: 01.15.2013
PROJECT NO.	AS NOTED	DATE: 01.15.2013	AS NOTED
PROJECT NO.	656-13-225	DATE: 01.15.2013	SCIP
PROJECT NO.	XXXX	DATE: 01.15.2013	XXXX
PROJECT NO.	PD101-51	DATE: 01.15.2013	XXXX



three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarters inch = one foot
one half inch = one foot
three eighths inch = one foot
one quarter inch = one foot
one eighth inch = one foot

one eighth inch = one foot

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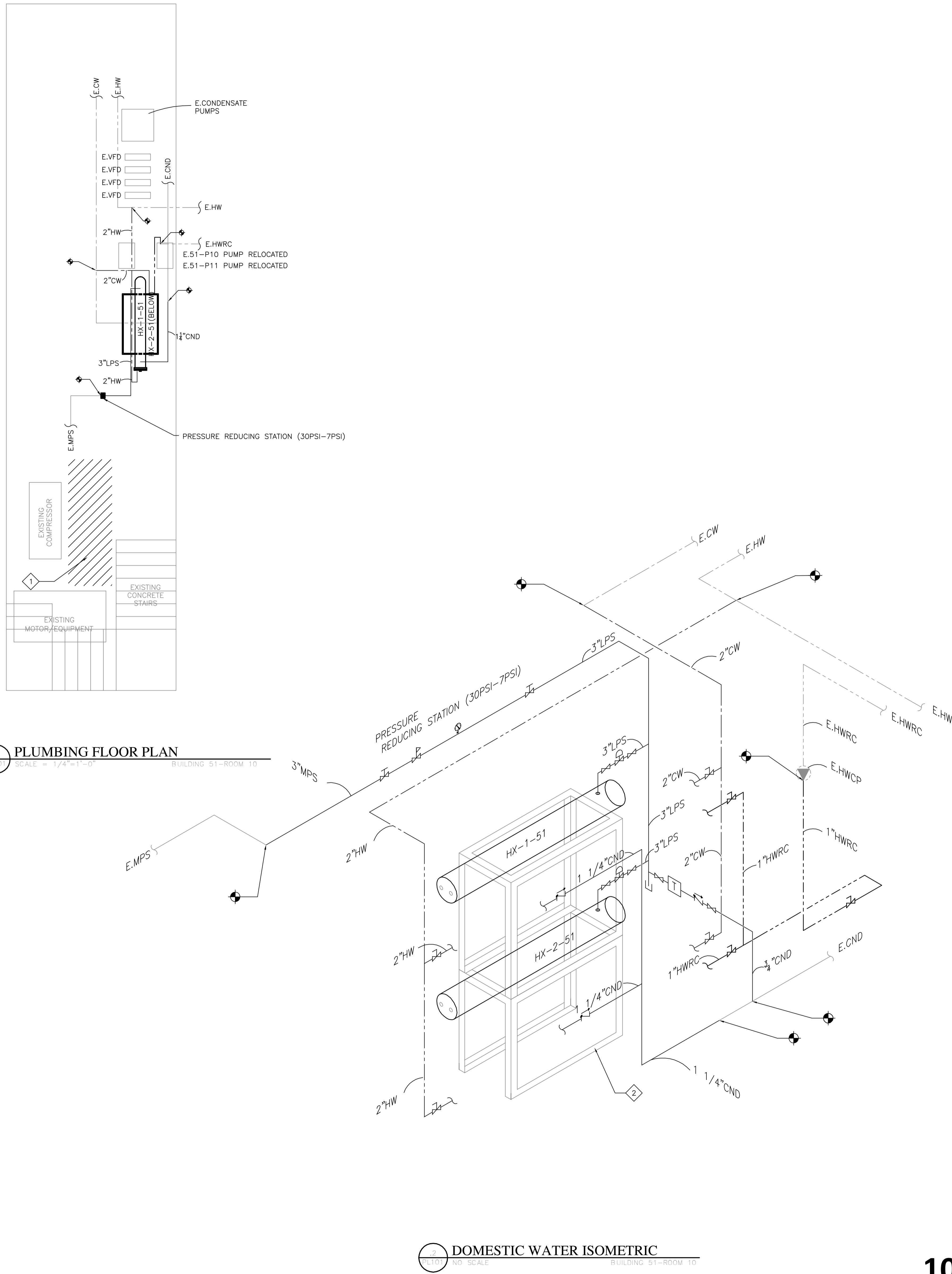
one eighth inch = one foot

one eighth inch = one foot

one eighth inch = one foot

one eighth inch = one foot

one eighth inch = one foot



GENERAL NOTES

1. PLUMBING CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS.
2. ALL FLOOR AND WALL PENETRATIONS SHALL BE SEALED TO MEET FIRE RATINGS.
3. SEE SHEET PL-001 FOR SEQUENCE OF CONSTRUCTION.
4. PLUMBING CONTRACTOR SHALL COORDINATE INSTALLATION OF TEMPORARY HEAT EXCHANGER (THX-1), RELOCATION OF HYDRONIC PUMPS AS SHOWN ON PL102, DEMOLITION OF EXISTING HEAT EXCHANGER AND INSTALLATION OF NEW HEAT EXCHANGERS HX-1-51 AND HX-2-51.

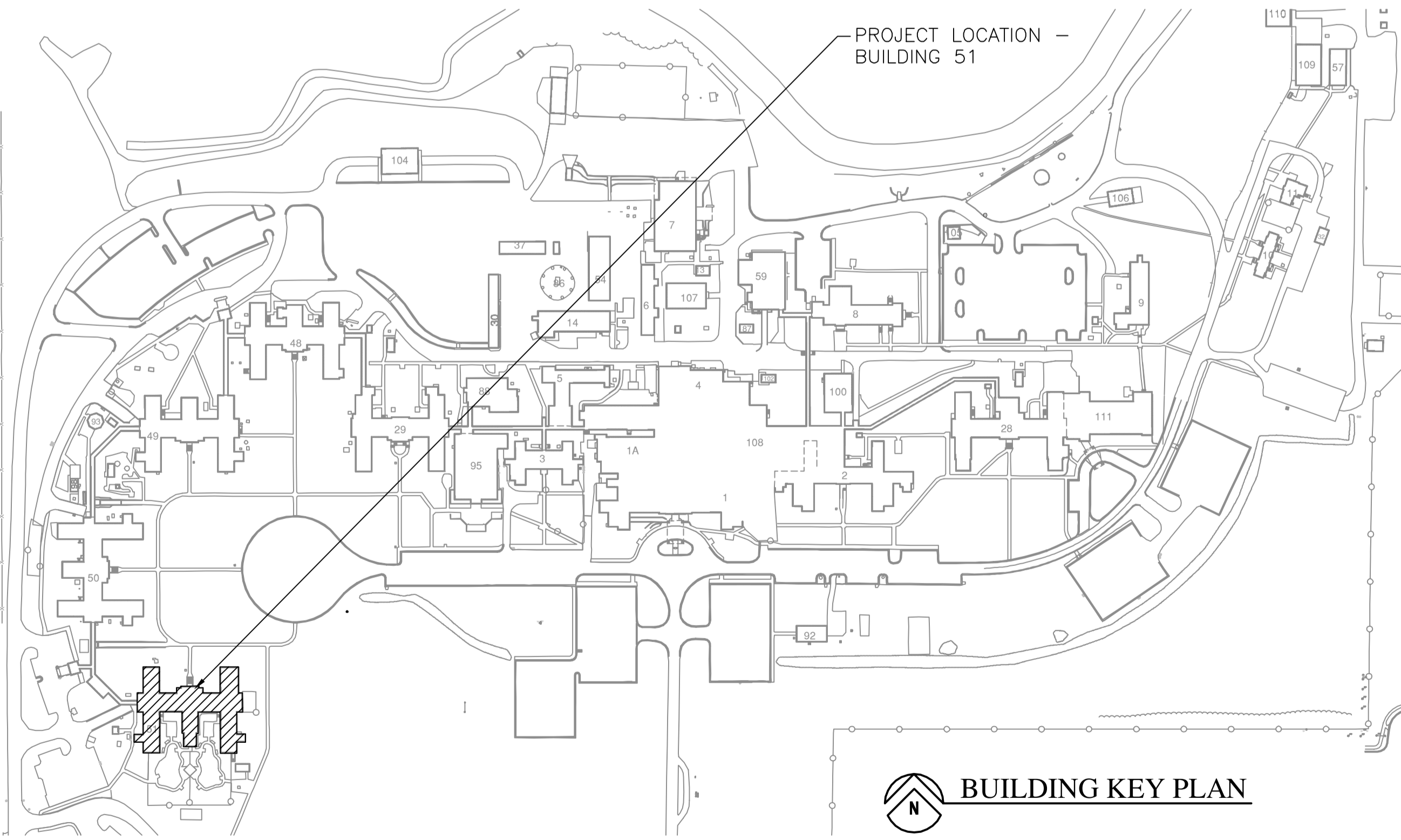
PLAN NOTES

1. TEMPORARY HEAT EXCHANGER (THX-1) LOCATION.
2. PLUMBING CONTRACTOR SHALL PROVIDE AND INSTALL PRE-MANUFACTURED HEAT EXCHANGER SKID. SKID SHALL BE PRE-PIPE INCLUDING VALVES, GAUGES AND FITTINGS AS SHOWN ON 1/PL501. CONTROLS CONTRACTOR SHALL PROVIDE HEAT EXCHANGER MANUFACTURER REQUIRED FLOW SWITCHES AND TEMPERATURE GAUGES. HEAT EXCHANGER MANUFACTURER SHALL INSTALL FLOW SWITCHES AND TEMPERATURE GAUGES PRIOR TO SHIPMENT. PLUMBING CONTRACTOR, CONTROLS CONTRACTOR AND MANUFACTURER SHALL COORDINATE.

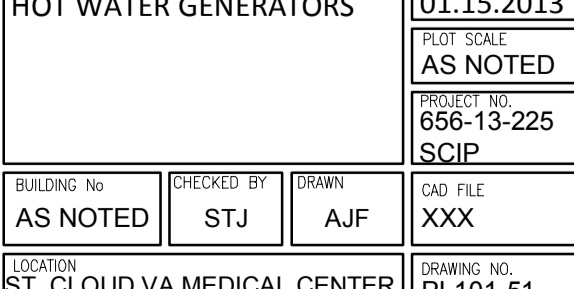
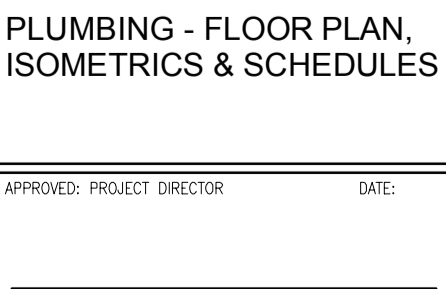
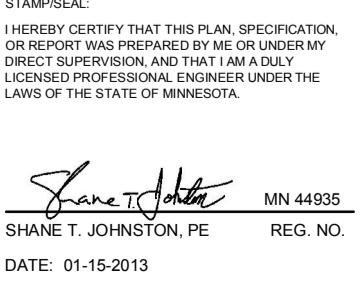
HEAT EXCHANGER SCHEDULE

UNIT TAG	MFGR.	MODEL	HEAT EXCHANGED (MBH)	FLUID TYPE	FLOW RATE (GPM)	FLUID PD (FT H2O)	EWI (°F)	LWT (°F) (BEFORE DRV)	LWT (°F) (AFTER DRV)	FLUID TYPE	PRESSURE (PSI)	FLUID PD (PSI)
HX-1-51	ARMSTRONG	665-DWP-PTW-DMC1-150	3,300	DOMESTIC WATER	50	10	50	140	120	STEAM	7	CONSTANT
HX-2-51	ARMSTRONG	665-DWP-PTW-DMC1-150	3,300	DOMESTIC WATER	50	10	50	140	120	STEAM	7	CONSTANT

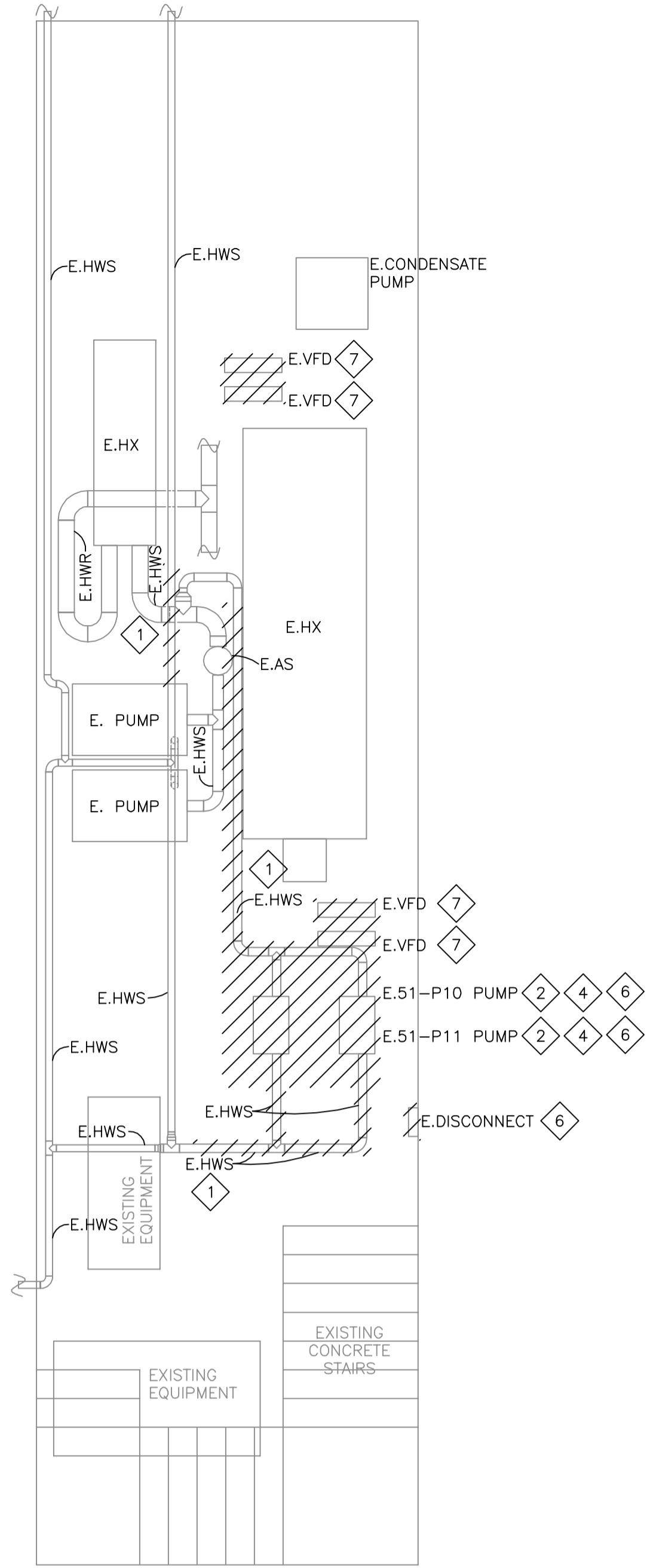
NOTES:
1. SEE DETAIL 1/PL501.



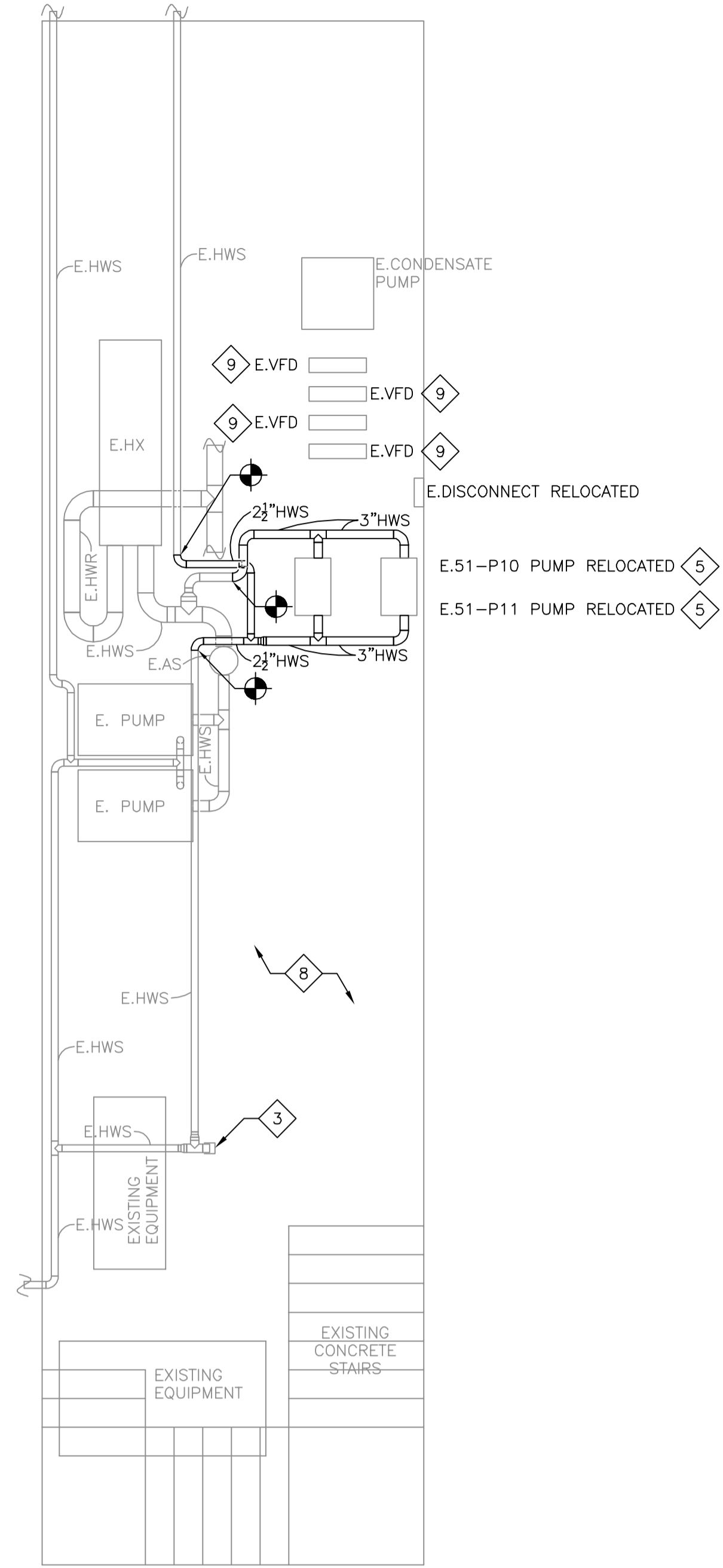
100% Construction Documents - For Construction



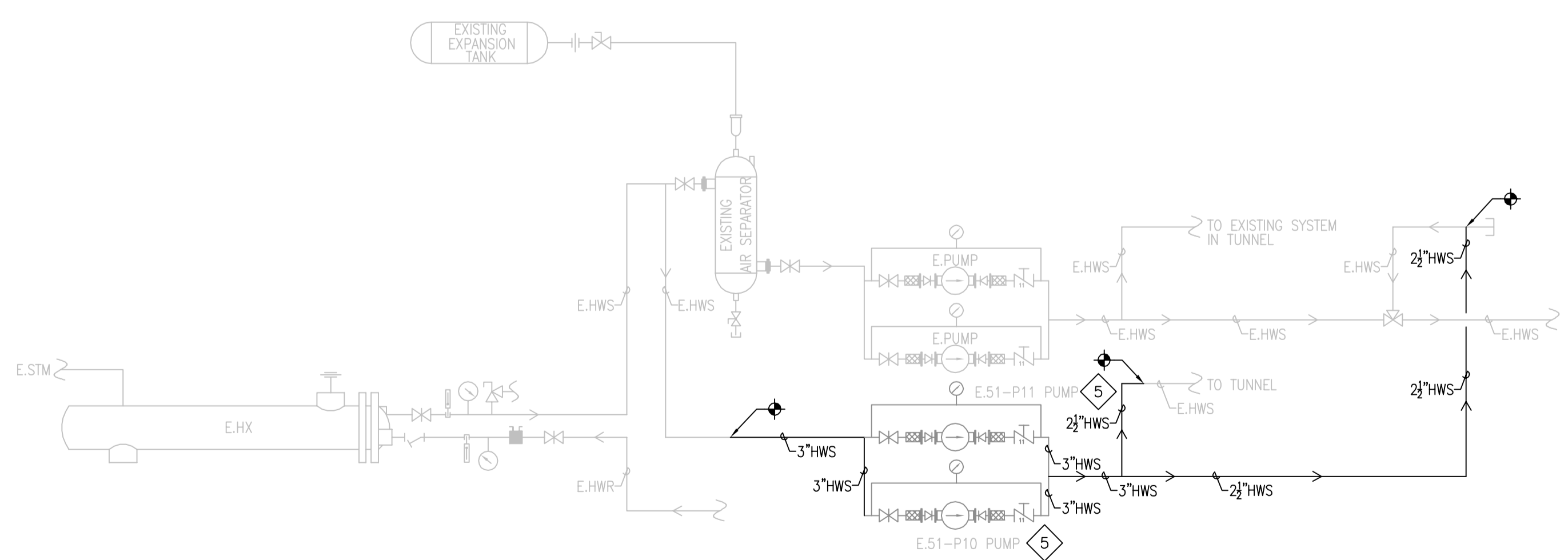
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one and one half inches = one foot
one inch = one foot
three quarters inch = one foot
one half inch = one foot
three eighths inch = one foot
one quarter inch = one foot
one eighth inch = one foot



DEMOLITION PLAN
SCALE = 1/4" = 1'-0"
BUILDING 51-ROOM 10



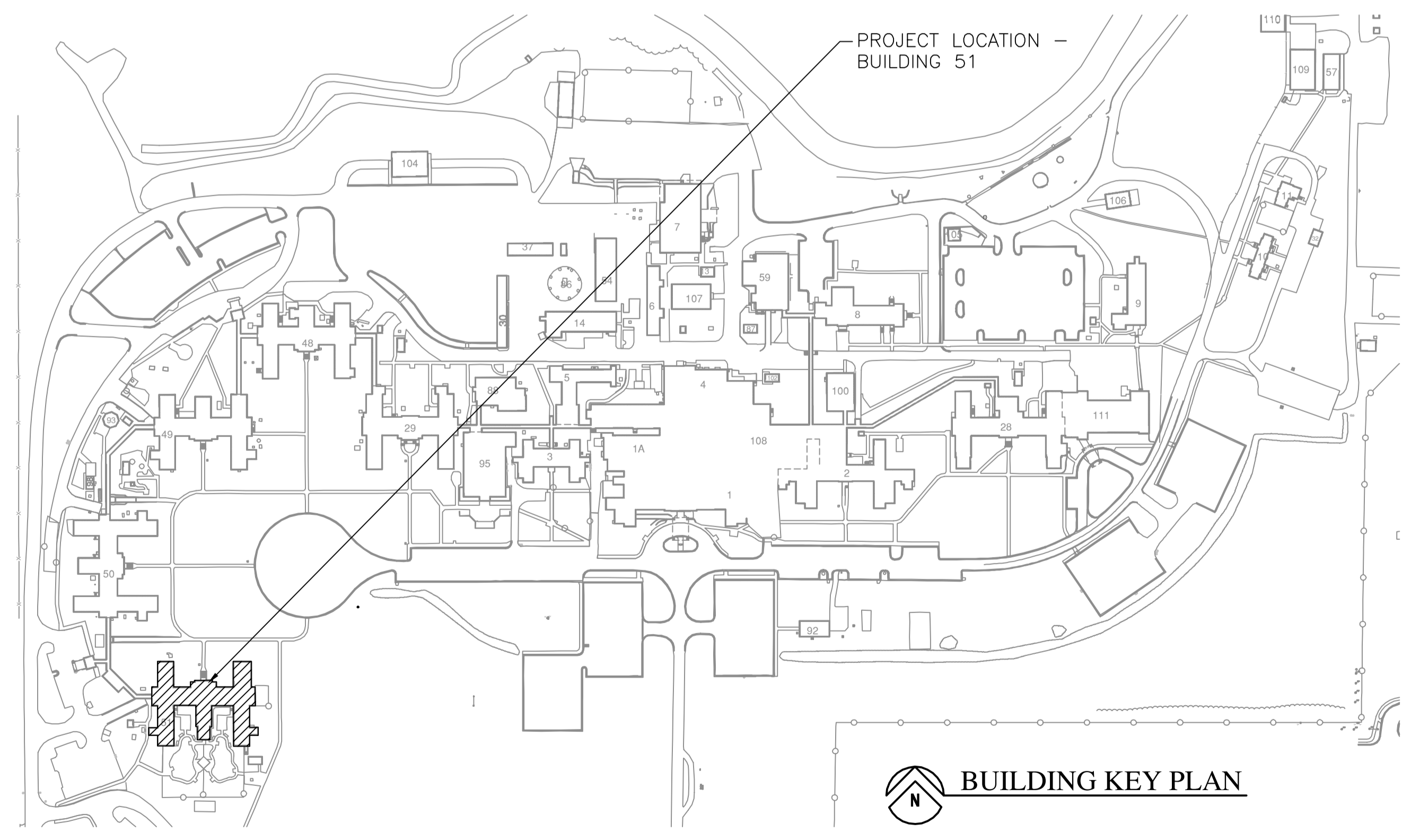
HYDRONIC HEATING PLAN
SCALE = 1/4" = 1'-0"
BUILDING 51-ROOM 10



HYDRONIC HOT WATER HEATING SCHEMATIC
NO SCALE
BUILDING 51

- ### GENERAL NOTES
1. PLUMBING CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS.
 2. ALL FLOOR AND WALL PENETRATIONS SHALL BE SEALED TO MEET FIRE RATINGS.
 3. ALL HATCHED ITEMS DENOTES RELOCATION OR DEMOLITION.
 4. BUILDING 51 CONSTRUCTION SHALL BE PERFORMED DURING JULY OR AUGUST. HYDRONIC HEATING SYSTEM SHALL BE OPERATIONAL BY AUGUST 31ST.

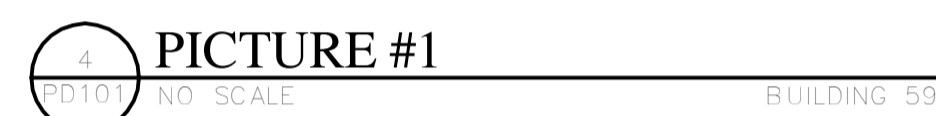
- ### PLAN NOTES
- 1 REMOVE EXISTING HYDRONIC HOT WATER SUPPLY PIPE, FITTINGS, AND ASSOCIATED HANGERS AND INSULATION.
 - 2 RELOCATE EXISTING IN-LINE HYDRONIC PUMPS. EXISTING FLOOR SUPPORT, VALVES, GAUGES, CONTROLS, AND ASSOCIATED MATERIALS SHALL BE RELOCATED WITH PUMP. SEE 2/PL102-51 FOR NEW PUMP LOCATION.
 - 3 CAP EXISTING 3" HOT WATER SUPPLY PIPE.
 - 4 EXISTING HYDRONIC PUMPS SHALL BE REMOVED PRIOR TO INSTALLATION OF TEMPORARY HEAT EXCHANGER (THX-1) AS SHOWN ON SHEET PL-101-51. PUMPS SHALL BE RELOCATED AS SHOWN ON SHEET 2/PL102-51 AFTER DEMOLITION OF EXISTING DOMESTIC HEAT EXCHANGER AS SHOWN ON SHEET PD-101-51. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL EXISTING AND NEW EQUIPMENT LAY-OUT.
 - 5 RELOCATED IN-LINE PUMP.
 - 6 PLUMBING CONTRACTOR SHALL HIRE A LICENSED ELECTRICAL CONTRACTOR TO RELOCATE ALL ASSOCIATED ELECTRICAL CONDUIT, CONDUCTORS, DISCONNECTS, ETC. WITH EXISTING PUMP. EXTEND ALL EXISTING ELECTRICAL CONDUIT, ETC. AS REQUIRED FROM THIS LOCATION TO NEW LOCATION SHOWN ON SHEET 2/PL102-51. PROVIDE NEW CONDUCTORS, NO SPLICING IS ALLOWED.
 - 7 PLUMBING CONTRACTOR SHALL HIRE A LICENSED ELECTRICAL CONTRACTOR TO RELOCATE ALL ASSOCIATED ELECTRICAL CONDUIT, CONDUCTORS, DISCONNECTS, ETC. WITH EXISTING VFD. EXTEND ALL EXISTING ELECTRICAL CONDUIT, ETC. AS REQUIRED FROM THIS LOCATION TO NEW LOCATION SHOWN ON SHEET 2/PL102-51. PROVIDE NEW CONDUCTORS, NO SPLICING IS ALLOWED.
 - 8 LOCATION OF NEW HEAT EXCHANGER, CONTRACTOR SHALL COORDINATE ALL EQUIPMENT INCLUDING CLEARANCES PRIOR TO FINAL EQUIPMENT INSTALLATION.
 - 9 RELOCATED VFD.



BUILDING KEY PLAN

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No	REVISION	DATE	 Design Tree ENGINEERING AND LAND SURVEYING	Alexandria Office 120 17th Avenue W. Alexandria, MN 56308 (507) 752-1290	St. Cloud Office 539 West St. Germain, Suite 250 St. Cloud, MN 56301 (320) 217-9557	 JLG architects Alexandria 525 Broadway Street Alexandria, MN 56308 phone 320.759.9030 fax 320.759.9062 www.jlgarchitects.com copyright © 2012	STAMPED: SHANE T. JOHNSON, P.E. DATE: 01-15-2013 REG. NO. MN 4808	DRAWING TITLE: PLUMBING - HYDRONIC PLANS	APPROVED PROJECT DIRECTOR:	DATE:	PROJECT TITLE: HOT WATER GENERATORS	DATE: 01.15.2013	NOT SCALE AS NOTED	PROJECT NO. 656-13-225	SCIP XXXX	ST. CLOUD VA MEDICAL CENTER ST. CLOUD, MN 56303	DRAWING NO. PL102-51	DATE: 01-15-2013	 VAMC SAINT CLOUD MN



5 PICTURE #2
PD101 NO SCALE BUILDING 5

BUILDING 59


PROJECT LOCATION - BUILDING 59

BUILDING KEY PLAN

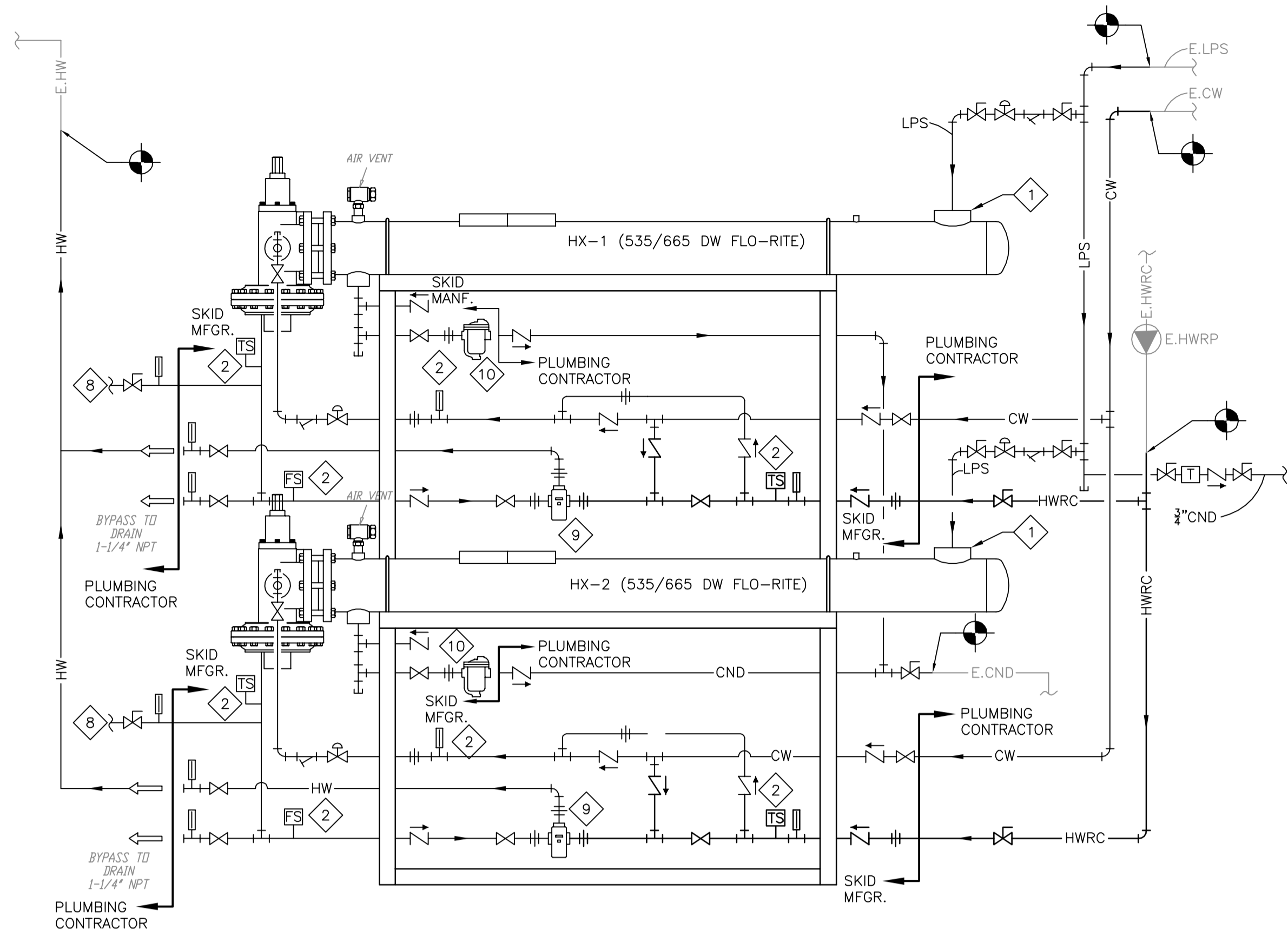




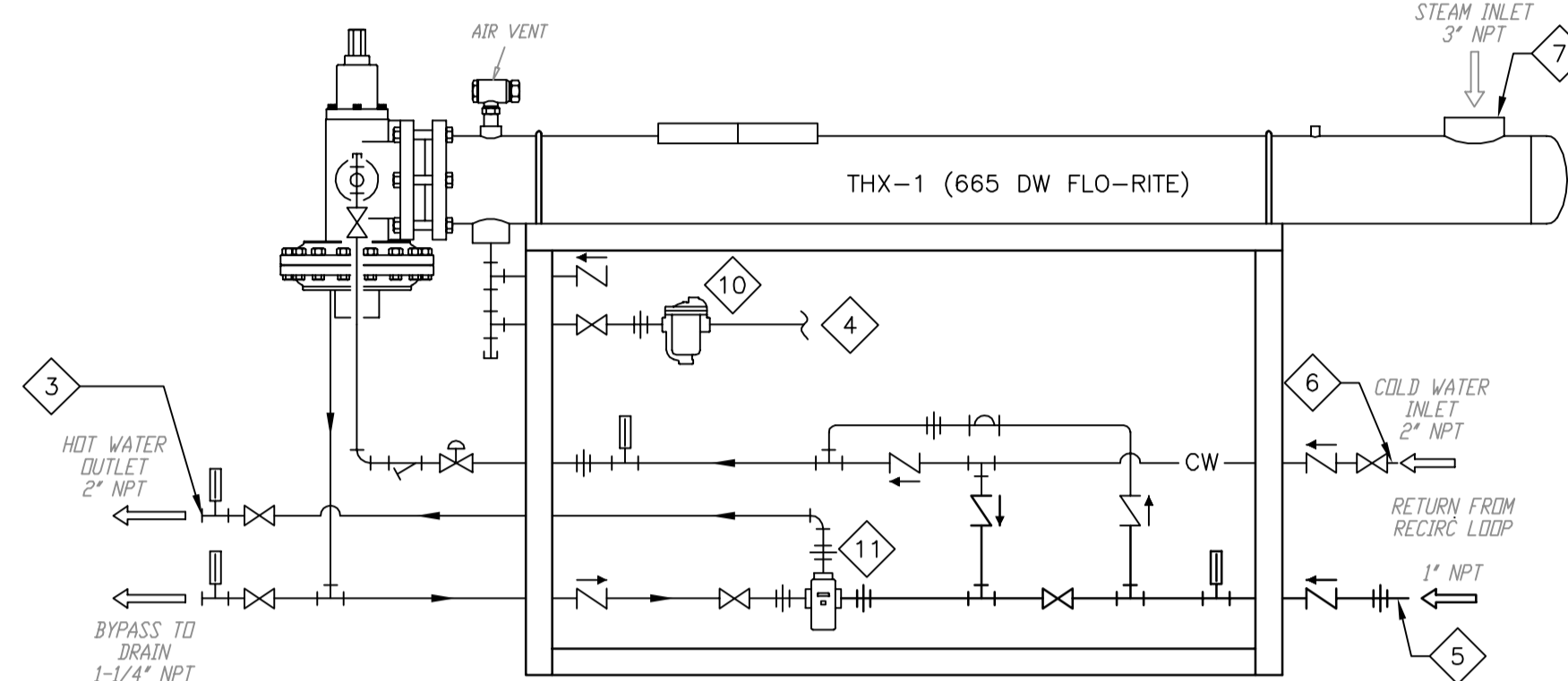
- NOTES:
1. SEE DETAIL 1/PL501.



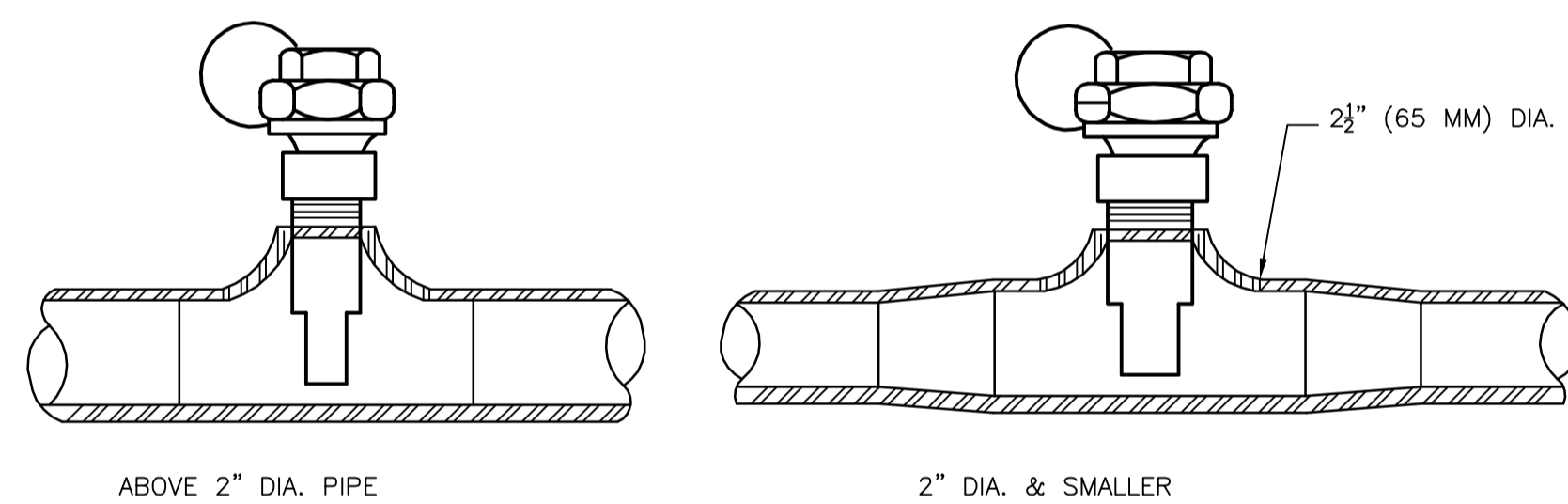
three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarters inch = one foot
one half inch = one foot
three eighths inch = one foot
one quarter inch = one foot
one eighth inch = one foot
one eighth inch = one foot



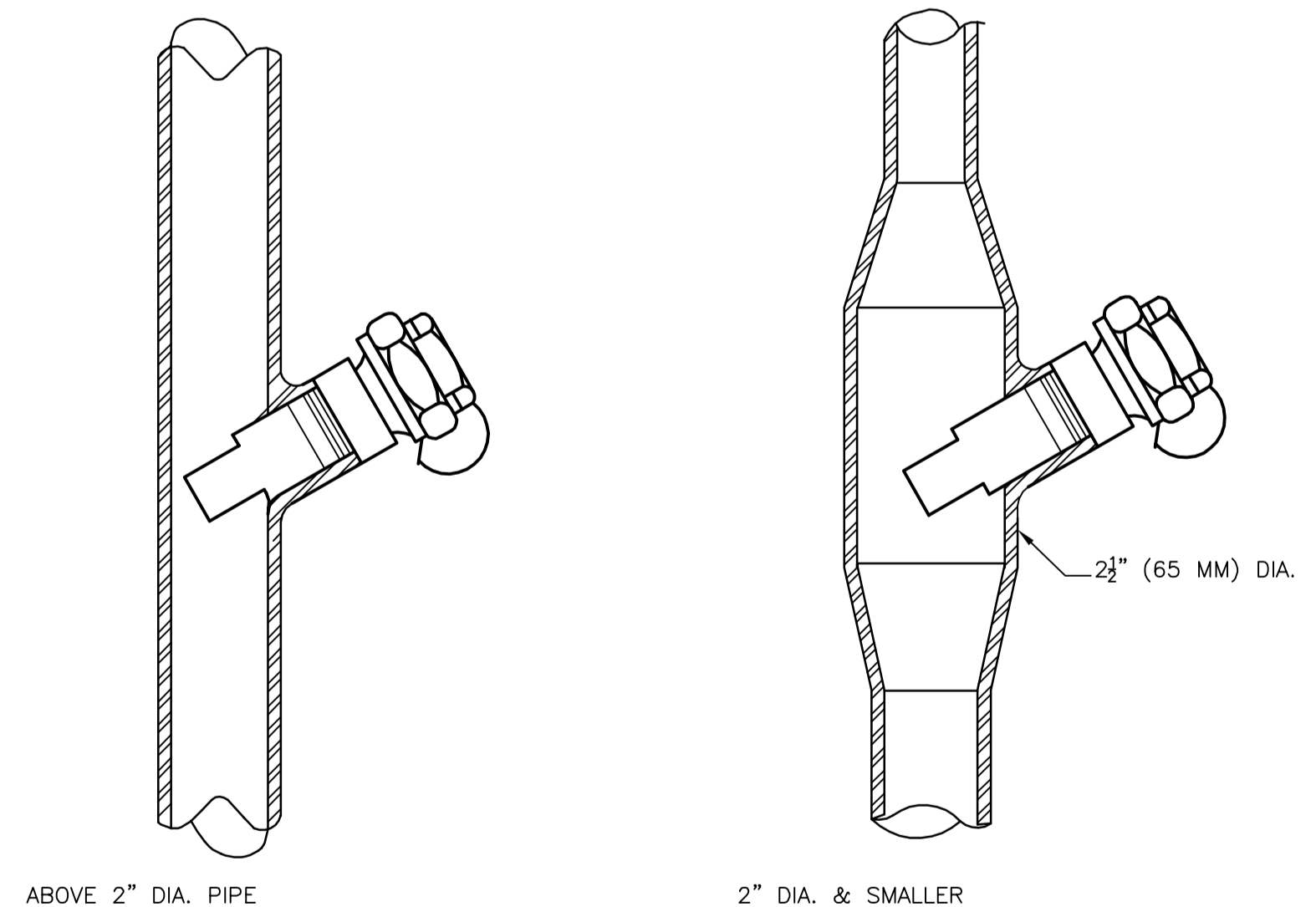
1 PIPING SCHEMATIC
1/8" = 1'-0" NO. SCALE



2 TEMPORARY HEAT EXCHANGER DETAIL
1/8" = 1'-0" NO. SCALE

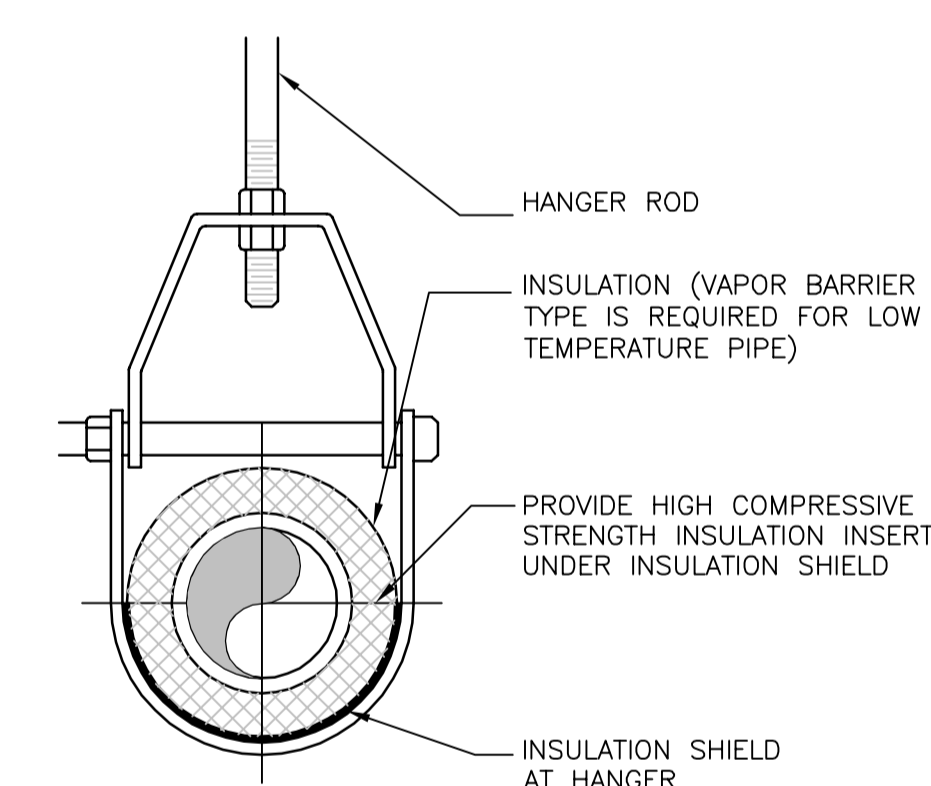


HORIZONTAL

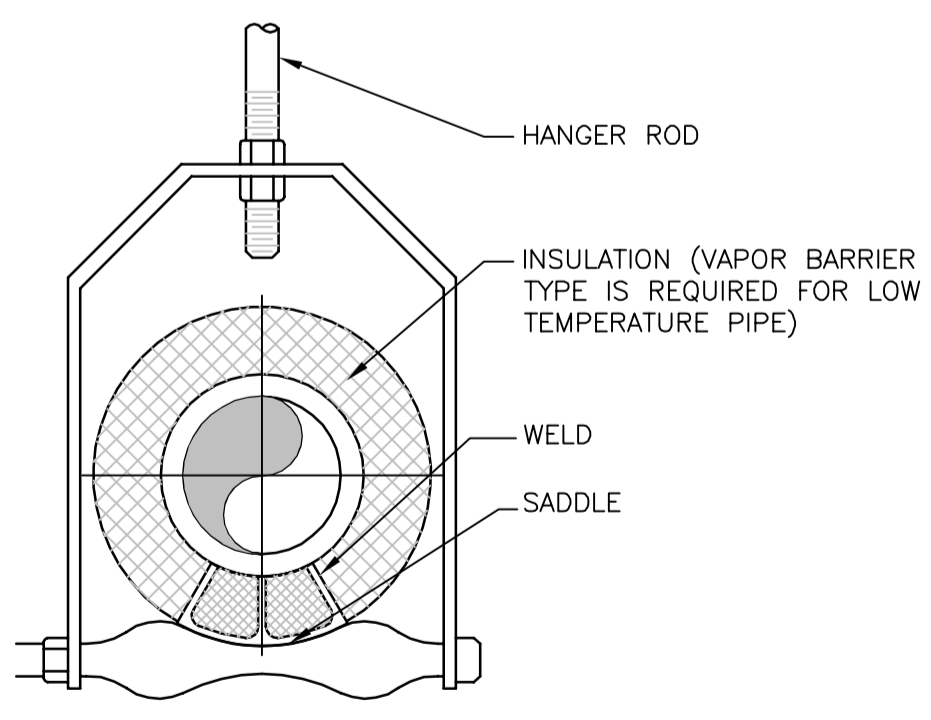


VERTICAL

3 INSTALLATION OF THERMOMETER WELLS
1/8" = 1'-0" NO. SCALE

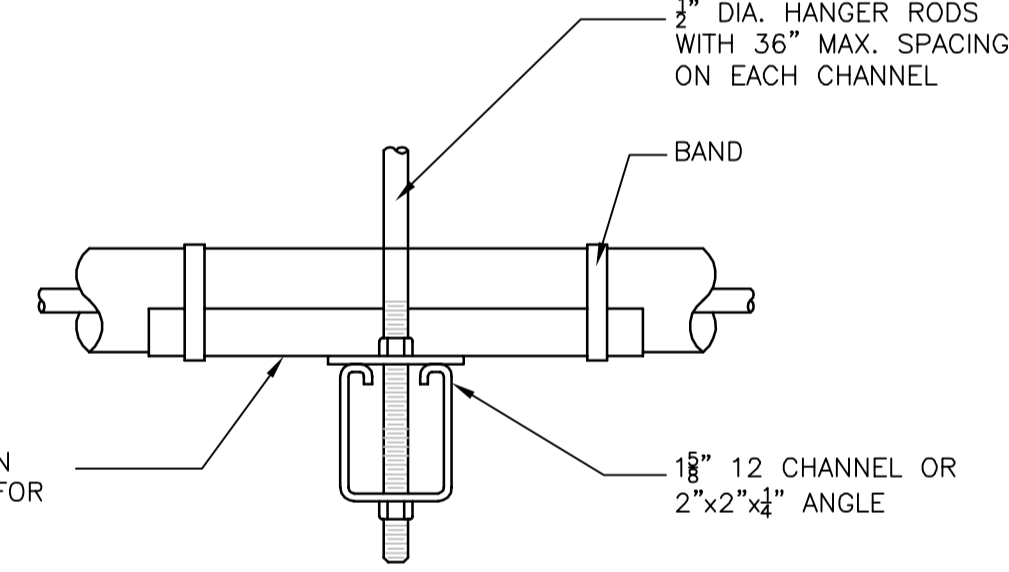


ADJUSTABLE CLEVIS HANGER

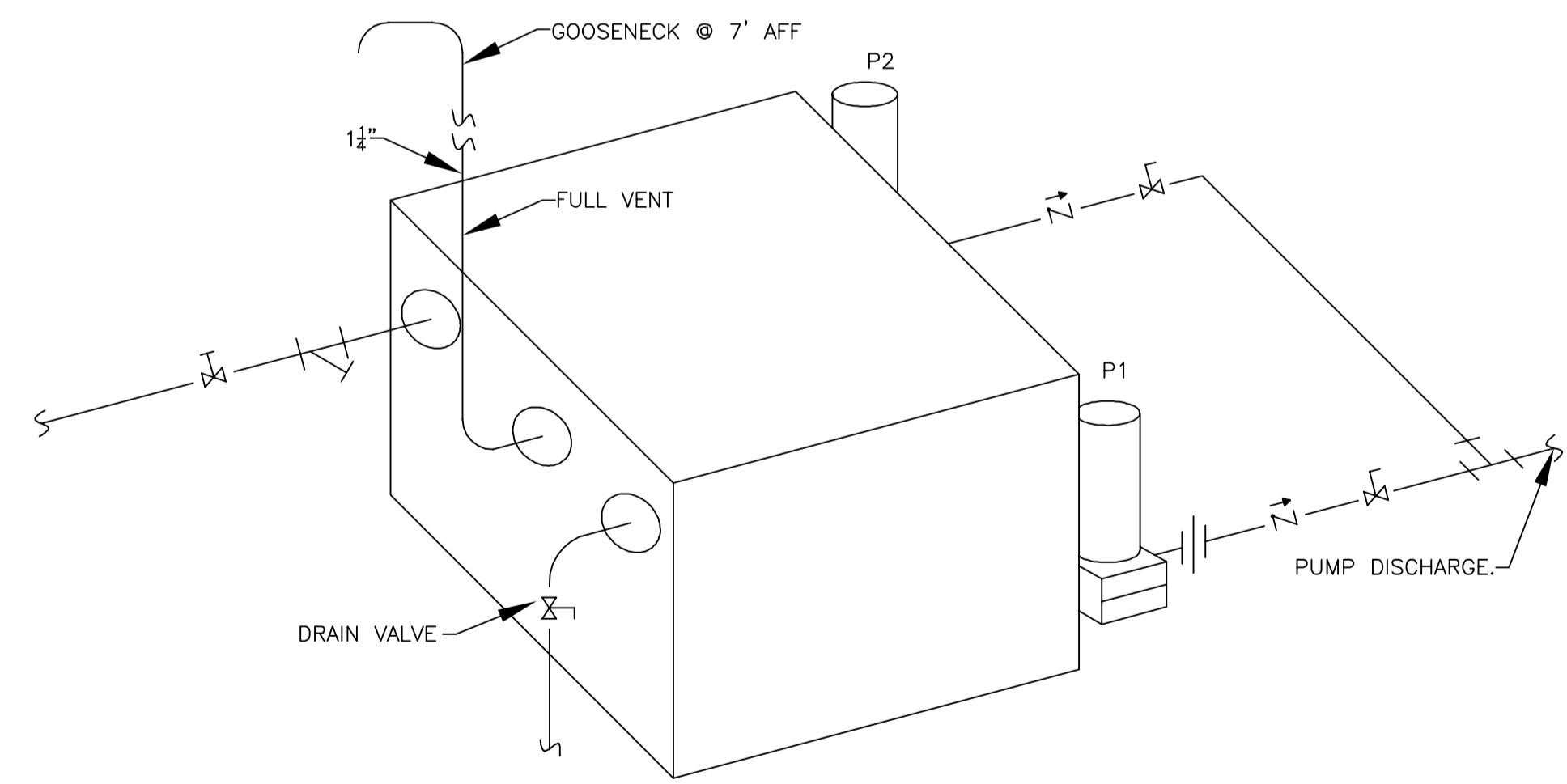


ADJUSTABLE ROLLER HANGER

4 TYPICAL PIPE HANGER DETAIL
1/8" = 1'-0" NO. SCALE



TRAPEZE HANGER
(1000 LB. UNIFORM LOAD MAX.)



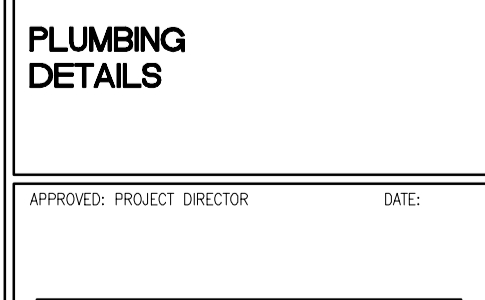
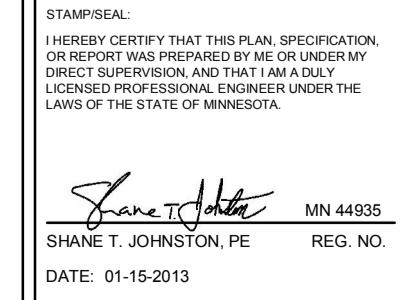
5 RECEIVER CONDENSATE UNIT DETAIL
1/8" = 1'-0" NO. SCALE

- GENERAL NOTES**
- SEE SPECIFIC BUILDING ISOMETRICS FOR PIPE SIZES.
 - SEE BUILDING FLOOR PLANS AND ISOMETRICS FOR EXISTING PIPE LOCATIONS.

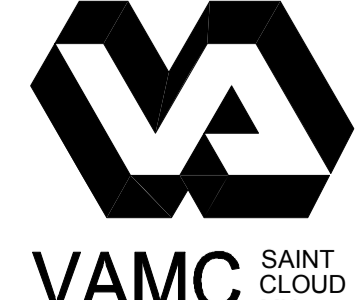
- PLAN NOTES**
- PLUMBING CONTRACTOR SHALL CONNECT STEAM PIPING TO HEAT EXCHANGER IN THE FIELD.
 - PROVIDED BY CONTROLS CONTRACTOR. INSTALL BY MANUFACTURER.
 - PLUMBING CONTRACTOR SHALL PIPE HOT WATER PIPE BACK TO TIE-IN POINT.
 - PLUMBING CONTRACTOR SHALL PIPE CONDENSATE BACK TO TIE-IN POINT.
 - PLUMBING CONTRACTOR SHALL PIPE HOT WATER RECIRC PIPE BACK TO TIE-IN POINT.
 - PLUMBING CONTRACTOR SHALL PIPE COLD WATER PIPE BACK TO TIE-IN POINT.
 - PLUMBING CONTRACTOR SHALL PIPE STEAM BACK TO TIE-IN POINT. NO CONTROL VALVE REQUIRED.
 - PLUMBING CONTRACTOR SHALL PIPE 160' HOT WATER TO KITCHEN AND BOOSTER HEATER IN BUILDING 4 AND TO LAUNDRY ROOM IN BUILDING 59.
 - DIGITAL MIXING VALVE. PROVIDE RADA DRV80 OR APPROVED EQUAL. LICENSED ELECTRICAL CONTRACTOR SHALL WIRE DIGITAL MIXING VALVE, 120V, BACK TO EXISTING EMERGENCY ELECTRICAL PANEL. BOTH MIXING VALVES ON SKID SHALL BE WIRED BACK TO A SPARE 20 AMP BREAKER.
 - CONDENSATE TRAP, ARMSTRONG 814 OR APPROVED EQUAL.
 - DIGITAL MIXING VALVE. PROVIDE RADA DRV80 OR APPROVED EQUAL. PLUMBING CONTRACTOR SHALL HIRE A LICENSED ELECTRICAL CONTRACTOR TO PROVIDE 120V POWER TO DIGITAL MIXING VALVE.

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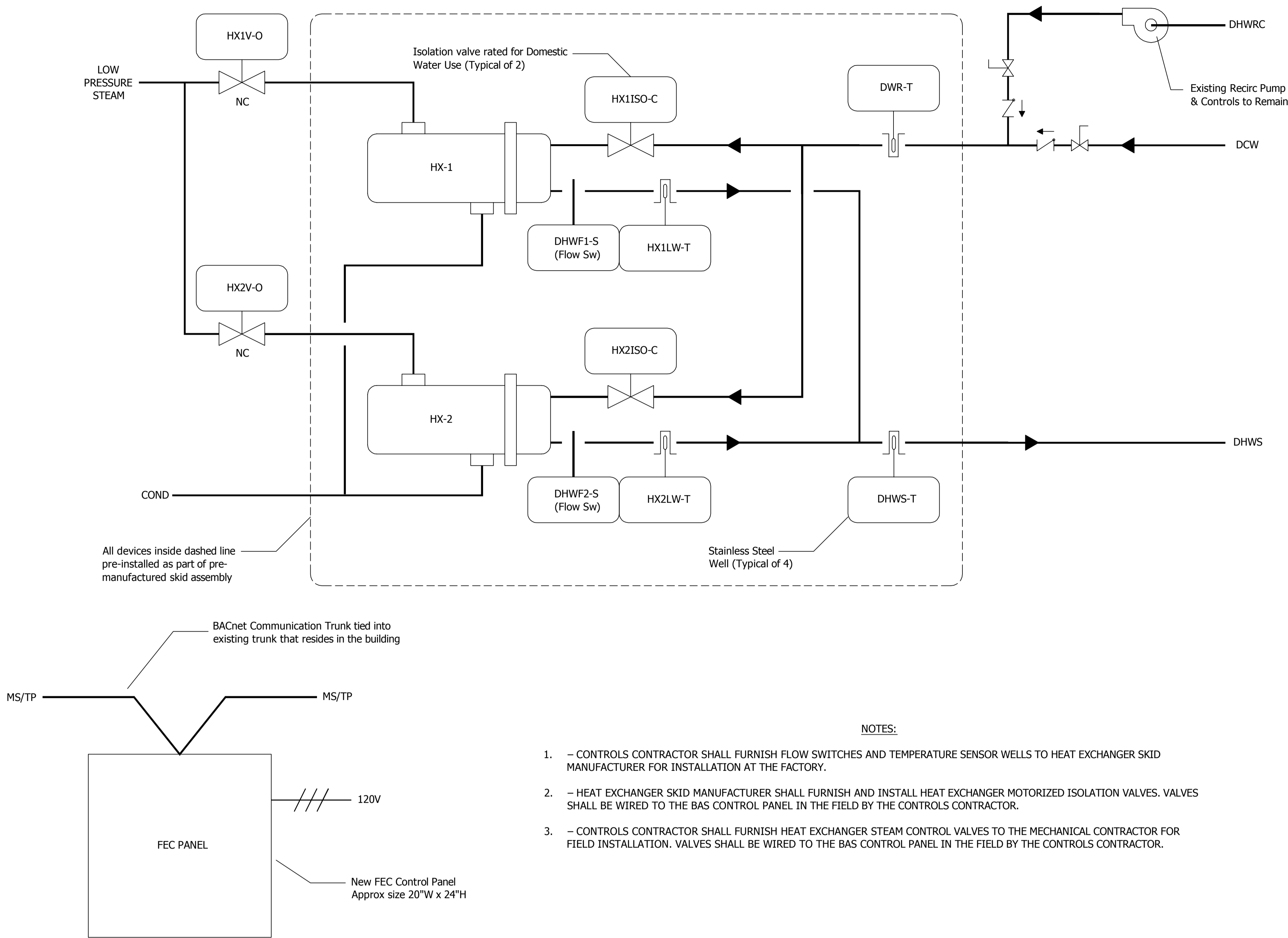
NO.	REVISION	DATE



PROJECT TITLE	DATE
HOT WATER GENERATORS	01.15.2013
PROJECT NO.	AS NOTED
PROJECT NO.	656-13-225
PROJECT NO.	SCIP
PROJECT NO.	XXX
PROJECT NO.	PL501
PROJECT NO.	01-22-23



STEAM TO HOT WATER HEAT EXCHANGER FOR DOMESTIC HOT WATER
(TYPICAL FOR EACH BUILDING)



NOTES:

- CONTROLS CONTRACTOR SHALL FURNISH FLOW SWITCHES AND TEMPERATURE SENSOR WELLS TO HEAT EXCHANGER SKID MANUFACTURER FOR INSTALLATION AT THE FACTORY.
- HEAT EXCHANGER SKID MANUFACTURER SHALL FURNISH AND INSTALL HEAT EXCHANGER MOTORIZED ISOLATION VALVES. VALVES SHALL BE WIRED TO THE BAS CONTROL PANEL IN THE FIELD BY THE CONTROLS CONTRACTOR.
- CONTROLS CONTRACTOR SHALL FURNISH HEAT EXCHANGER STEAM CONTROL VALVES TO THE MECHANICAL CONTRACTOR FOR FIELD INSTALLATION. VALVES SHALL BE WIRED TO THE BAS CONTROL PANEL IN THE FIELD BY THE CONTROLS CONTRACTOR.

VAMC St Cloud - DHW HX Upgrades Project - POINTS LIST

TAG	DESCRIPTION	TYPE	ALARM	GRAPHIC	TREND	NOTES
HX1V1-O	Heat Exchanger 1 - Steam Valve Output	AO		X		Fail Closed
HX1LW-T	Heat Exchanger 1 - Leaving Water Temp	AI	X	X	X	HIGH LIMIT ALARMS
DHWF1-S	Domestic Hot Water HX-1 Flow Status	BI	X	X	X	
HX1ISO-C	Heat Exchanger 1 - Iso Valve Command	BO		X	X	2-way Isolation Valve - Fail Closed
HX2V1-O	Heat Exchanger 2 - Steam Valve Output	AO		X		Fail Closed
HX2LW-T	Heat Exchanger 2 - Leaving Water Temp	AI	X	X	X	HIGH LIMIT ALARMS
DHWF2-S	Domestic Hot Water HX-2 Flow Status	BI	X	X	X	
HX2ISO-C	Heat Exchanger 2 - Iso Valve Command	BO		X	X	2-way Isolation Valve - Fail Closed
FUTURE	RESERVED	BO	---	---	---	Future Lead Pump Command
FUTURE	RESERVED	BI	---	---	---	Future Lead Pump Status
FUTURE	RESERVED	BO	---	---	---	Future Standby Pump Command
FUTURE	RESERVED	BI	---	---	---	Future Standby Pump Status
DHWST-SP	DHW Supply Temp Setpoint	AD		X	X	
DHWSYS-EN	Domestic Hot Water System Enable	BD		X	X	
DHWST-HL	DHW Supply Temp Hi Limit	AD		X		
DWR-T	Domestic Water Return Temp	AI		X	X	
DHWS-T	Domestic Hot Water Supply Temp	AI	X	X	X	HIGH & LOW LIMIT ALARMS

SECTION 23 09 23
DIRECT-DIGITAL CONTROL SYSTEM FOR HVAC.

PART 1- SEQUENCES OF OPERATION

1.1 STEAM TO HOT WATER HEAT EXCHANGER - FOR DOMESTIC HOT WATER

- SYSTEM ENABLE:** THE DOMESTIC HOT WATER HEATING SYSTEM WILL AUTOMATICALLY START WHEN THE SYSTEM ENABLE IS "ON". WHEN THE SYSTEM ENABLE IS "OFF" THE DOMESTIC HOT WATER HEATING SYSTEM WILL BE DISABLED.
- HEAT EXCHANGER CONTROL:** THIS SYSTEM CONSISTS OF TWO (2) STEAM HEAT EXCHANGERS (HX). BOTH HEAT EXCHANGERS WILL OPERATE SIMULTANEOUSLY. EACH HX WILL HAVE AN ISOLATION VALVE ON THE WATER SIDE THAT WILL BE CLOSED WHEN THE HX IS INACTIVE AND OPEN WHEN IT IS ACTIVE. EACH UNIT WILL HAVE A LOW PRESSURE STEAM INLET VALVE(OPEN/CLOSE) THAT WILL BE CLOSED WHEN THE HX IS INACTIVE AND OPEN 100% WHEN IT IS ACTIVE. (CONTROL VALVE SHALL BE IN SEQUENCE WITH WATER SIDE ISOLATION VALVE). THE VALVES WILL NOT BE ALLOWED TO OPERATE UNLESS THE HX IS ACTIVE AND FLOW THROUGH THE HX IS PROVEN (VIA THE FLOW SWITCH). IF THE DOMESTIC HOT WATER SUPPLY TEMPERATURE IS MORE THAN 5 DEG F (ADJ) BELOW SETPOINT FOR MORE THAN 10 MINUTES (ADJ) A CRITICAL "PRIMARY DOMESTIC HOT WATER HEAT EXCHANGER FAILURE" ALARM WILL BE GENERATED.
- HIGH TEMPERATURE SAFETY:** WHEN THE WATER TEMPERATURE, AS MEASURED BY THE LEAVING WATER SENSOR AT EACH HX OR THE SENSOR LOCATED ON THE COMMON SUPPLY PIPING, EXCEEDS THE HOT WATER SUPPLY TEMPERATURE HIGH LIMIT (160 DEGF - FULLY ADJUSTABLE) A CRITICAL "HIGH DOMESTIC WATER TEMPERATURE" ALARM WILL BE GENERATED AND THE STEAM VALVES WILL BE SHUT DOWN - A MANUAL RESET WILL BE REQUIRED TO RESTART THE SYSTEM.

END OF SECTION

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